DOCUMENT RESUME

ED 122 798 IR 003 415

AUTHOR	Ball, Samuel; And Others
TITLE	Reading With Television: A Follow-Up Evaluation of the Electric Company.
INSTITUTION	Children's Television Workshop, New York, N.Y.; Educational Testing Service, Princeton, N.J.
REPORT NO	ETS-PR-74-15
PUB DATE	Jun 74
NOTE	348p.; For a related document, see IR 003 417
EDRS PRICE	MF-$0.83 HC-$18.07 Plus Postage.
DESCRIPTORS	Audiences; Classroom Environment; *Educational Television; Elementary Education; Elementary School Students; *Longitudinal Studies; Media Research; *Program Evaluation; Programing (Broadcast); Public Television; *Reading Achievement; Reading Difficulty; Reading Instruction; Reading Skills; Student Attitudes; Tables (Data); Teacher Attitudes; *Television Research
IDENTIFIERS	*Electric Company

ABSTRACT

The second-year evaluation of the Electric Company children's television series used reading tests to assess the skills and concepts addressed on the show. Tests were given in October and May, and teacher questionnaires were administered three times during the second year. Classroom atmosphere during the viewing time was observed as well. The positive impact of the Electric Company on reading skills and student attitudes was as favorable in the second year as in the first, though the size of the impact in the second year was less. One year's viewing seemed to provide the major benefits for students. No particular teacher attitudes or behaviors were consistently found to have a relationship with student reading skill gains as measured by this evaluation. A summary of the first-year evaluation is appended. (CH)

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READING WITH TELEVISION:

A FOLLOW-UP EVALUATION OF THE ELECTRIC COMPANY

Samuel Ball
Gerry Ann Bogatz
Kathryn M. Kazarow
Donald B. Rubin

IR003 415

A report to the Children's Television Workshop

U.S. DEPARTMENT OF HEALTH,
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Acknowledgments

This is the fourth in a series of reports involving large-scale evaluations of *Sesame Street* and *The Electric Company*. In the days of our *Sesame Street* evaluations we acknowledged our appreciation to those who had helped by awarding them "Earnies" with apologies to Bert and Ernie, the *Sesame Street* muppets. We rejected calling these awards "Oscars" because of the grouchy muppet connotation. Last year when we studied *The Electric Company* we changed our award to "The Last Word"--a play on the ending sequence of the first 130 shows in the series. Unfortunately, the show's producers suspended this ending sequence in this our follow-up year, apparently leaving us without a topical title for our appreciation awards. However, this is probably the last in our series of large-scale summative evaluations of this show; so for this reason it remains appropriate again to give The Last Word awards to those who have so ably helped and cooperated in this work.

For our field coordinators, Cecelia Ham in Fresno and Anthony DeNiro in Youngstown, we have no hesitation in proclaiming that theirs was The Last Word in efficient and responsible data collection supervision.

To the most cooperative school systems and their officers, the nominees are:
Fresno County Board of Education's Superintendent of Schools, Ernest Poore and Coordinator, Compensatory Education, Harriet Jowett.

Also,

Youngstown Board of Education's Superintendent of Schools, Robert Pegues, Director of Instruction and Curriculum, Clay Folsom, and Elementary School Principal, Edward Rakocy.

Since all of these officers and both systems were The Last Word in cooperation, each receives an award. Last Word awards are also due to our testers and teachers. Over a hundred of these dedicated people in Fresno and Youngstown were involved in this study and although it is trite to write that the study could not have been conducted without their help, it is also true.

Within Educational Testing Service, there are a number of people who deserve The Last Word in their respective fields.

Adele Lechowicz who has typed this report. Everything you read is presented courtesy of her typing fingers.

Cathy Walter and Teri Hauler for coding the data.

Sandi Landes for her art work.

Alice Gerb who has The Last Word award for her programming excellence. She was responsible for editing and developing the data bank, matching it with the previous year's bank, and implementing a host of statistical procedures. While Alice has not always had The Last Word during the months of working with the data, she does now.

Samuel Ball
Gerry Ann Bogatz
Kathryn Kazarow
Donald Rubin

CHAPTER I: INTRODUCTION

A. Background: The Electric Company

When Children's Television Workshop (CTW) was established in 1968, a major purpose was to develop children's television programs that were both entertaining and educational. Sesame Street was its first product and was aimed at 3- to 5-year-old children. The show is now in its fifth year of broadcasting and Educational Testing Service (ETS) conducted major evaluations in its first two years.[1, 2]

CTW felt that another program, focussing on the area of reading, should be formulated for school-age children. The need for such a program was evident, for reading is a crucial skill in our society and large numbers of school children have reading problems. Also, since reading is an integral part of the learning process, trouble in reading areas can retard progress in other school subjects.

After 18 months of conferences between CTW staff and outside consultants regarding the proposed content of the new show, The Electric Company was born. Its format, like Sesame Street's, is variably-paced and diversified. Basic reading skills such as blending, scanning, and chunking letter groups are presented in an eclectic mix of methods. The skills are presented by well-known actors, cartoon characters, musical production numbers, and a host of other television-technology techniques. In the process of putting all this together, The Electric Company became, according to one critic, "the world's most complicated" TV series ever produced.[3]

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[1] Ball, S. and Bogatz, G., The First Year of Sesame Street: An Evaluation. Educational Testing Service, PR 70-15, October, 1970.

[2] Bogatz, G. and Ball, S. The Second Year of Sesame Street: A Continuing Evaluation. Educational Testing Service, PR 71-21, November, 1971.

[3] Martin Mayer, New York Times Magazine, January 28, 1973.

It was hoped by CTW that these kinds of presentations would be entertaining and thereby attract and hold the child's attention. It was also hoped that the show would gain national acceptance and there is some reason to believe that this has been achieved. Herriot and Liebert of Florida State University conducted a nationwide survey of the show's viewing audience between the second and sixth weeks of broadcast. They reported that the first year's series was being viewed by 18,811 schools, or 37 percent of all elementary schools who have access to the show. This represents 23 percent of all elementary schools in the United States.[1] The figures for the second year survey by Liebert are 25,735 schools representing 35 percent of the nation's elementary schools.[2] However, the main purpose of the show is to help children as they learn to read--especially children who have already begun to experience difficulty learning with standard reading methods. The purpose of this report is to present further evidence of the efficacy of the series as it attempts to achieve this major goal.

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[1] "The Electric Company" In-school Utilization Study, Vol. 1: The 1971-72 School and Teacher Surveys. Robert E. Herriott and Roland J. Liebert. August, 1972.

[2] "The Electric Company" In-school Utilization Study, Vol. 2: The 1972-73 School and Teacher Surveys and Trends since Fall, 1971. Roland J. Liebert, October, 1973.

B. The First Year Evaluation--A Summary

CTW, being aware of the need for an independent evaluation of The Electric Company, contracted with ETS to perform a summative evaluation of the first year of the show.[1]

The ETS study addressed the following questions:

1. What are the effects of viewing The Electric Company in school on first to fourth grade classes? What are the effects of viewing in school on second grade children who score in the lower half of their grade on normed reading achievement tests? What are the effects of viewing in school on third and fourth grade children who score in the bottom quartile on normed reading achievement tests?[2]
2. What are the effects of viewing The Electric Company in school on first to fourth grade children from Spanish-background, on black children, and on white children? What are the effects of first to fourth grade boys and girls?
3. Are there any differential effects from viewing The Electric Company in school on color TV sets versus on black and white TV sets?
4. What are the effects of viewing The Electric Company at home on first to fourth grade classes? What are the effects of viewing at home on second grade children who score in the lower half of their grade on normed reading achievement tests? What are the effects of viewing at home on third and fourth grade children who score in the bottom quartile on normed reading achievement tests?
5. Does frequency of viewing affect the show's impact on children viewing at home?

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[1] Ball, S. and Bogatz, G. Reading with Television: An Evaluation of The Electric Company. Educational Testing Service, PR 73-2, February, 1973.

[2] The lower half of second graders and the lowest quarter of third and fourth graders were defined as "target" groups.

6. Does The Electric Company affect the attitudes of children toward reading or toward school?

7. Does The Electric Company affect attitudes of teachers or parents toward the children and their reading performance? What are the attitudes of teachers toward the show?

The research design for the study called for an in-school experiment and an at-home experiment. Two sites were selected for the in-school experiment--Fresno, California and Youngstown, Ohio. Two sites were also chosen for the at-home experiment--Richmond, Virginia and Washington, D.C. The in-school experiment consisted of randomly assigning classes of children in first, second, third, and fourth grades to view or not view The Electric Company programs. Viewing could be controlled in Fresno and Youngstown because this program was shown in school during regular school time and was not broadcast by the local television stations after school hours. The at-home viewing experiment consisted of randomly assigning classes of children in these same four grades to be either encouraged or not encouraged by their classroom teacher to watch The Electric Company programs at home. Children were pretested on a specially designed test, The Electric Battery, in September, 1971 before the program was aired and were again tested on the same battery in May, 1972 when the series of programs had ended.

Results of the study indicated that while the data from the at-home viewing experiment were ambiguous, children in all four grades studied who viewed The Electric Company in school showed higher gains in many of the reading skills tested than children who did not view and the gains were larger in the lower grades. For a more detailed presentation of the major findings see Appendix A which contains a summary of the major findings of the first year study.

C. The Rationale for the Second Year Evaluation

Perhaps the first point that deserves consideration is why there should be a second year evaluation. An extensive evaluation of the first year of The Electric Company was conducted and positive effects were noted in both sites where in-school viewing was studied. However, a second year evaluation provided three opportunities:

---To study the first year sample longitudinally and thereby study both the long term effects of the first year's viewing and the effects of two years' viewing. (The typical program evaluation looks only at immediate impact. But what we especially need to know about a program in order to evaluate its usefulness is its long term impact.)

---To replicate the first year evaluation and thereby further test the validity of those findings. (Too often in program evaluation a single study is left unreplicated with the result that an initial, possibly false conclusion is thenceforth used as a basis for decisions.)

---To study the effects of changes in the curriculum from the first year to the second year. (The Electric Company, as we shall see, did not stay unchanged and the effects of monitoring program changes is an important task of evaluations.)

In order to achieve these three major evaluation goals, within the a limited budget, we turned again to the two in-school viewing sites from the first year evaluation--Fresno, California and Youngstown, Ohio.[1] The in-school viewing sites had boards of education that were willing to continue to cooperate with our evaluation research. The sites had been properly monitored during the first year of the show and during the following summer. Thus, there were available, two relatively large school systems in which the show was broadcast under strictly controlled circumstances during the school year[1] and not at all during school vacation periods. Of course, it would have been useful to have had more test sites in both the first and second year as Yin (1973) suggests[2] but more such large, controlled, and cooperative sites were virtually impossible to obtain and financial considerations would have precluded their use were they obtainable.

---

[1] It was not reasonable to return to the two at-home viewing sites because the design problems that occurred during the first year evaluation were further compounded by the uncontrolled summer broadcasting of the show in those areas.

A second related decision that was dictated, in part, by cost considerations was to follow up the first and second grade classes but not the third and fourth grade classes of the first year study. The fourth graders had moved into fifth grade--beyond the target audience--and the third graders already were showing ceiling effects in their scores at the posttest for the first year. Thus, it made more sense to study the first graders of the first year sample (moving into second grade) and the second graders of the first year sample (moving into third grade).

Returning to the two in-school viewing sites and studying just the first and second graders of the first year into this second year provided a reasonable and cost-effective opportunity to operationalize the major evaluation goals.

---

[1] The show was telecast only during school hours so that control children could not view it at home. Also, the specified control classrooms did not view the show in school.

[2] Yin, R. K. The Workshop and the World: Toward an Assessment of the Children's Television Workshop. Rand, Santa Monica, California, 1973.

CHAPTER II: THE SECOND YEAR EVALUATION

A. Research Design

The design for this follow-up evaluation of The Electric Company had to take cognizance of the design of the first year study. As mentioned before in Chapter I, the second year evaluation was based on a follow-up of the first and second grade classes from the first year in-school viewing study. In the first year evaluation, classes had been paired within schools, with one member of the pair randomly assigned to the experimental (viewing) treatment and the other to the control (non-viewing) treatment. In both sites the goal in the first year had been to sample 10 pairs of first grade classes and 20 pairs of second grade classes. In fact, after attrition in Fresno, there were:

	Number of Pairs of Classes	
	Fresno	Youngstown
1st grade	11	10
2nd grade	14	20

Because the sampling unit was the class, and subsequent major analyses were based on classroom level data the conclusions reached referred to the impact of the show on classes. This not only made technical sense but it also made educational sense. Individual students do not usually have the opportunity to elect to view or not to view in school. Decisions in a school about whether to view a television show are made with the classroom in mind.

Of course, the first and second grade classes in the first year evaluation had metamorphized and their students had graduated by the second year into a large number of second and third grade classes. A listing was obtained from Fresno and Youngstown coordinators at the start of the second year showing all the classes into which the children in the first year evaluation had moved. When there were less than three children from the first year study in a class, that class was not considered eligible for follow-up purposes. The numbers of classes and schools for the second year were:

	Fresno	Youngstown
2nd grade	25 classes in 9 schools	24 classes in 10 schools
3rd grade	31 classes in 11 schools	46 classes in 19 schools

In both sites, the new classes were mixed with respect to the first year treatment received by the children. Each class usually contained some children from the first year experimental group, some from the first year control group and some others who were not part of the first year evaluation. The reasons for the particular composition of the classes varied from school to school. Some schools tried to retain classes relatively intact from year to year--their classes had mainly experimental or mainly control children in them. Other schools regrouped the classes using a process that approached randomization. Almost all seemed to make individual exceptions as one would expect so that the integrity of the intact classes was never complete and the regrouping was never truly random.

The problem then posed at the outset of the second year evaluation was how to continue the policy and practice of the first year evaluation--to assign classes randomly to treatments. It was not reasonable to pair classes within schools, as had been the practice in the first year evaluation,and then randomly assign within each pair. This was because the composition of the new classes could have been affected in many ways by the various methods used in the schools to allocate children to their new classes.[1] Also, the even number of classes per grade per school in the first year ensured by the pairing process changed in the second year in some schools to an odd number of classes.

Assignment to treatment in the second year was done randomly within school. All classes in each grade in a particular school were considered together. They were then grouped according to the number of Year 1 experimental and control children in each class. Consider, for example:

		First year status
School B, Grade 2	Class 1	12 experimental children, 6 control children, 8 children new to study
	Class 2	8 experimental children, 12 control children, 7 children new to study
	Class 3	0 experimental children, 6 control children, 20 children new to study

In this case, classes 1 and 3 might have been paired against class 2 to make an approximately equal number of experimental and control children. Random assignment to treatment was effected by flipping a coin. After the coin flip, class 2 was assigned to one treatment; classes 1 and 3 were assigned to the other treatment. The purpose of this method was to ensure that in each grade, in each school, there were similar numbers of first year experimental and control children who were in second year experimental and control conditions. It also ensured that the assignment of a class to a given treatment in the second year was random. A class had equal probability of being assigned to experimental or control conditions.

---

[1] This may have involved a reactive component to the first year experiment and the first year of the show.

Thus, in this follow-up, second year evaluation, the following groups of children were available to be studied:

1. Year 1 experimental who were Year 2 experimental (EE)
2. Year 1 experimental who were Year 2 control (EC)
3. Year 1 control who were Year 2 experimental (CE)
4. Year 1 control who were Year 2 control (CC)

As well, one may collapse groups 1 (EE) and 2 (EC) to study experimental (viewing) children from the first year (irrespective of their subsequent viewing in the second year) and groups 3 (CE) and 4 (CC) to study control (non-viewing) children from the first year (irrespective of their subsequent viewing behavior).

In addition, as indicated earlier in this section, there was a substantial number of children who entered sampled classes for the first time in the second year. These children were either newly enrolled in the school or were in non-sampled classes in the school during the first year study. Some of them had viewed in the first year; some had not. These new children were studied separately.

The sites for the follow-up, second year study--Fresno, California and Youngstown, Ohio--continued to retain the virtues that had made them excellent sites for the first year study. Viewing and non-viewing behavior of the classes in the study was maintained, the show was not available during the summer or outside school hours, and the experimental conditions were secure.

Classes in the follow-up study were tested in late September or early October, 1972 (pretest, Year 2) and again in May, 1973 (posttest, Year 2). Thus, for all EE, EC, CE, and CC children there were measures available at pretest, Year 1, (before the show was ever telecast); posttest, Year 1, (at the end of the first year's 130 shows); pretest, Year 2, (at the end of the summer, no viewing); and posttest, Year 2, (at the end of the second year's 130 shows). With these four groups and with these four testings, it was possible to assess the immediate effects of the first year's viewing (E versus C at posttest, Year 1); the retained effects of the first year's viewing, after the summer vaction period, (E versus C at pretest, Year 2); the retained effects of the first year's viewing one year later, (E versus C at posttest, Year 2); the effects of two year's viewing, (EE versus CC); the effects of viewing the first year rather than both years, (EC versus EE); and the effects of viewing the second year but not the first year, (CE versus CC).

Note again, that the results so obtained refer to first graders-second graders, and to second graders-third graders and this study is replicated in two sites.

B. Field Operations

Arrangements for the second year study were essentially the same as those established during the first year study. In both sites a local coordinator was appointed to oversee field operations. In Fresno, the coordinator from the first year was reemployed and in Youngstown a new one was appointed who operated jointly with the first year coordinator during the first month of field activities. Both had been employed by their local school systems prior to The Electric Company evaluation.

Responsibility for all local matters rested with the coordinators, including hiring, training, and supervising testers and tester-aides, scheduling test sessions and classroom observations, controlling the quality of data, receiving and shipping test materials, maintaining the experimental and control conditions in the classrooms, and coordinating activities between testers and school systems and between school systems and ETS.

Each local coordinator hired testers and tester-aides to administer the Electric Battery during September-October and again in May in both years. Testers and aides had previous experience with children, usually as teachers or substitutes. Coordinators were trained by ETS staff to administer the tests; they then held training sessions to instruct their local testers and aides in the proper use of test materials. After pretesting children in the study and collecting teacher questionnaires, coordinators checked all data for completeness and scheduled make-up sessions for children who had been absent in order to reduce the number of rejected tests. All data were then forwarded to ETS for final coding and processing.

During the six months the show was broadcast, coordinators were primarily responsible for observing experimental classes and for ensuring that experimental classes viewed the show and that control classes did not. Each experimental classroom was observed approximately once a month and all classrooms were visited in mid-January for the collection of interim teacher questionnaires.

C. Measuring Instruments

1. General Considerations

The measuring instruments used in the second year evaluation were built upon those used in the first year study and in some cases were identical to those used previously. As in the first year, the focus of the second year study was the evaluation of children's reading. A variety of measuring instruments was used to assess not only reading performance but also classroom atmosphere and teacher attributes and performance. Pretests and posttests were administered before and after the experimental period to measure children's reading ability. In order to obtain biographical, attitudinal, and descriptive information about the teacher, the classroom and curriculum, questionnaires were distributed to all teachers before, during, and after the experimental period. Observations of the experimental classrooms were made while they viewed The Electric Company to assess classroom atmosphere and reactions to the show. A content analysis of the show was conducted in order to classify the kind and amount of instruction being televised.

The choice of measuring instruments was dictated both by the follow-up nature of the evaluation and by the limited amount of funds available for the second year evaluation. It was deemed desirable to keep the measures as similar as possible to those used in the first year since repeated assessments with the same measures yield data that can be directly compared. Therefore, the items in the children's reading tests were unchanged as were many questions in the teacher questionnaires. However, since we were also interested in investigating certain issues that had not been of primary concern during the first year, some new measures were developed and added to the analysis, particularly the observations of classes as they viewed the show.

The tests of the children were not expanded to reflect some new emphases of the show, some possible side-effects, and the need to assess reading process skills. In addition, questionnaires for parents that had been used in the first year were discontinued. Although background information on the follow-up children from these questionnaires was on file from the first year, data for new children were not available. However, parent questionnaire data from the first year yielded little evidence that parental attitudes or behavior had changed as a result of their children viewing the show. The elimination of the parent data in the second year study means that there is no parent information about children who are new to the study nor about parental changes that may have occurred during the second year of the evaluation.

2. Tests for Children

The tests for the children in the second year study were identical to those used in the first year with the one exception that the matching subtest, originally included as an easy section for the youngest children, was dropped. A copy of the Electric Battery and a brief description of the subtests may be found in Appendix C.

The Electric Battery was developed prior to the first year study and contains measures to assess the wide range of reading achievement behaviors to be addressed on the show. It also includes measures of possible side-effects and moderator variables. All of the tests except one standardized measure were developed by ETS staff specifically for the evaluation in cooperation with CTW and with the advice of reading and measurement consultants. This reading battery was pilot tested during the summer of 1972.

The Electric Battery includes a group-administered test, an individually-administered test given to some children, and one section of the Metropolitan Achievement Test appropriate for each grade level.

a. The Electric Battery Group Tests

The Electric Battery was developed to assess the effects of the show in the goal areas that were designated by the show's writers and producers. It also attempted to assess areas that were not directly taught on the show but that might reasonably be expected to be influenced by the show's content. The latter included sentence comprehension and attitudes toward school and toward reading.

Although the show was intended for children ranging in age from seven to ten years, a single battery was developed because the content of the show was the same for all children. The result was a battery that was most appropriate in level of difficulty for second grade children (the primary target audience of The Electric Company), was somewhat difficult for first graders, and was relatively easy for third and fourth graders, especially those who were above average readers for their grade. Nonetheless, at the time the battery was constructed it was deemed an appropriate and comprehensive assessment of the goal areas of the show.

The children in both grades were tested in groups in their classrooms by a tester trained by the local coordinator. Each tester was assisted by a tester-aide and by the classroom teacher who was requested to stay in the room during the testing. Since all classes were group tested, it was felt that three adults were needed in each class to maintain control and to aid individual children who might encounter difficulty in following directions.

The battery and the test booklets were designed so that children with limited reading ability could be validly tested. All tests were put in a single booklet, and each page of the booklet was a different color so that the child could easily follow test directions. Because the colored pages of the test booklets were also matched by colored pages in the tester's manual, the tester, aide, or teacher could quickly spot any child who had turned to the wrong page. The Electric Battery had a single basic format in which the child selected one of four options in the reading ability measures or one of two options in the attitudinal measures. It was hoped that a simple format would reduce confusion among the children. Also, it helped ensure that a child's wrong response was not due to an inability to understand the test format. For every item, children were instructed to make an X directly in the test booklets on the option of their choice. For a large number of items, choices were among pictures where only the stimulus had to be read so that a child's limited reading ability would not discourage him from continuing. In every item where a picture was presented as a stimulus or option, the tester named the picture to give the children both verbal and visual cues. Each subtest was introduced by one or two sample items and a maximum of six items appeared on any one page. Each tester also used an enlargement of the Electric Battery while administering the tests to demonstrate the page and the item at which the child should be looking.

There was no time limit imposed on any item or subtest in the battery. Instead, testers were instructed to go as slowly as necessary so that all children would have time to answer each question. When a child did not seem to understand the group instructions or was unable to keep up with the group, he or she was tested either individually or in a smaller group with the same battery but with more intensive supervision. The total testing time varied considerably between grades and from class to class within a grade, but in general, two testing sessions of 30 to 45 minutes each were required to complete the Electric Battery group test.

The Electric Battery group test contained 115 items which were categorized into 19 subtests assessing specific goals of the show. These subtests can be combined to make four subtotal scores that reflect the four major goal areas of the show--Blending of Letter Sounds, Chunking of Groups of Letters, Scanning for Structure, and Reading for Meaning.[1] The subtest scores are then combined into a grand total score that includes all the items in the battery. The reliabilities of the Electric Battery grand total, the subtotals, and the Metropolitan Achievement Tests (MAT) were calculated for pretest separately in both sites and reported in Table I-1.[2] In general, they were quite high and were similar to the reliabilities reported in the first year study.

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[1] See Appendix B for a more complete description of each area.

[2] Tables that present the major statistical analyses will be included in the text. However, in order to ensure that the presentation will not be unduly interrupted, most other tables have been placed in Appendix I. Tables in Appendix I are so designated by the alphabetic prefix I.

Intercorrelations of these subtests for pretest and posttest in the second year for both sites are presented in Tables I-2 and I-3. The intercorrelations of the subtest totals and the grand total of the Electric Battery were high (in the 90's). A high correlation was also obtained between the grand total scores of classes on the Electric Battery and their scores on the respective subtest of the MAT. The attitude scales had the lowest set of correlations with the other test totals; this seems to be reasonable since they assessed variables least related to the other tests.

The correlations between the two attitude measures were generally low. The two attitude areas being assessed--school and reading--are by no means identical. That is, one could enjoy school but not prefer reading to other school subjects. Similarly, one could prefer reading to the other school subjects and not enjoy school. Thus, the low correlations are less a matter of concern and more a warning that the attitudinal area is one requiring a multi-assessment approach.

In general, the correlations lend credibility to the tests themselves in that tests that are conceptually related are empirically related.

b. The Electric Battery Individual Test

In addition to being tested on the group-administered battery, a percentage of children in each classroom was randomly chosen and given an additional test in order to assess some goals that required verbal responses. Items on the individual test also repeated some of the group assessments by measuring the child's ability to produce orally certain groups of letters and words. The individual test consisted of 42 items and took about five minutes to administer to each child. It required that the child read aloud nine regular words, twelve nonsense words, and two sentences. The child was also asked to unscramble four sentences whose words were presented in a mixed-up order. The individual tests were administered by both the tester and the tester-aide.

Because of the large number of children in the study, individual tests in the first year were given to a random sample of 20 percent of the children in each class. In the second year, these same children were given the individual test both at pretest and at posttest. In addition, another 20 percent random sample of all children new to the study was individually tested.

c. Metropolitan Achievement Tests

One test of the Metropolitan Achievement Tests, Harcourt Brace Jovanovich, Inc., 1970 Edition, was administered to all children in the study. This standardized reading test was given in order to describe the groups of children, to identify those children who were "targeted" by CTW, and to determine the effects of the show as measured by a standardized instrument used in many schools. The particular MAT varied according to grade level as follows:

Grade 1: Pretest--Primer, Part 1, Listening for Sounds
Described as a 39-item test that measures "pupil's knowledge of beginning and ending sounds"
Posttest--Primary I, Part 1, Word Knowledge
Described as a 35-item test that measures "extent of pupil's reading vocabulary."

Grade 2: Pretest--Primary I, Part 1, Word Knowledge

Posttest--Primary II, Part 1, Word Knowledge

Described as a 40-item test that measures "extent of a pupil's reading vocabulary....Twenty-three items require pupil to identify a synonym, antonym, or classification for a given word."

Grade 3: Pretest--Primary II, Part 1, Word Knowledge

Posttest--Elementary Battery, Part 1, Word Knowledge

Described as a 50-item test that measures "extent of pupil's reading vocabulary....requires pupils to identify synonyms, antonyms, or word classification.... Items range from primary level to junior high level in difficulty."

The Metropolitan Achievement Tests were chosen from the many reading achievement tests available for several reasons. Of primary importance was the fact that the test is one of the most widely used in schools across the country and we hoped to be able to describe our sample in terms that were generalizable to many school situations. Second, the norms given for the tests discriminate well among children who score in the lower half and lowest quarter, a feature not common to many other standardized tests. The tests were standardized as recently as April, 1970. Also, unlike some other normed tests, where a chance score by a non-reader may be equivalent to a percentile rank exceeding 25, the MAT provides norms that allow poor readers to be distinguished from non-readers performing at the chance level.

3. Teacher Questionnaires

All teachers were asked to complete questionnaires, developed by ETS, three times each year--once before The Electric Company began, once midway through the series, and again near the end of the series. Appendix D contains the pretest questionnaire, Appendix E contains the interim questionnaire, and Appendix F contains the posttest questionnaire. The questionnaires were administered to obtain teacher background information (including education and teaching experience) and teacher attitudes (toward educational television, approaches to teaching reading, and the show itself). The following scales were developed by combining responses from several items:

---Attitude toward Educational TV Index, obtained by averaging the responses to pretest items 24a, 24b, 25a, and 25b and posttest items 9a, 9b, 10a, and 10b. It attempts to measure the teacher's attitudes toward educational television when watched both at home and in school.

---Attitude toward Phonics Index, obtained by averaging the responses to pretest items 24c and 25c and posttest items 9c and 10c. It attempts to measure the teacher's attitudes toward the phonics approach to teaching reading.

---Attitude toward Linguistics Index, obtained by averaging the responses to pretest items 24d and 25 d and posttest items 9d and 10d. It attempts to measure the teacher's attitudes toward linguistic approaches to teaching reading.

---Attitude toward Sesame Street Index, obtained by the responses to pretest item 26. It attempts to measure the extent to which the teacher perceives Sesame Street as a useful tool for helping preschool children.

---Attitude toward The Electric Company, obtained by the responses to item 28. It attempts to measure the extent to which the teacher perceives The Electric Company as a useful tool for helping children in their reading.

---Attitude toward Reading Performance Index, obtained by averaging the responses to pretest items 32, 33, and 34 and posttest items 11, 12, and 13. It attempts to measure the attitude of teachers toward the reading performance and potential capability of their children.

---Job Satisfaction, obtained by averaging the responses to pretest items 43-46, and 47-54. It attempts to measure the extent to which the teacher is satisfied with the teaching profession and the particulars of the current teaching situations.

The teacher questionnaires were also the main sources for estimates as to the amount of time teachers spent in reading activities per week. While continuous classroom observations would have been a more objective method by which to obtain such estimates, the number of classrooms (126) and the length of each needed observation (at least six hours) precluded doing this. The posttest teacher questionnaire was expanded from last year's to include items assessing the experimental teachers' attitudes toward The Electric Company.

4. Observations of the Classrooms

During the first year of The Electric Company, experimental classrooms were observed during their regular reading instruction periods. These observations were used to determine whether teachers' approaches to reading instruction affected the impact of The Electric Company. Analyses of these data failed to demonstrate any significant and consistent relationship between types of reading instruction and reading achievement as measured by the Electric Battery.

During the second year evaluation, experimental classrooms were observed during the time the classes viewed The Electric Company. This observation strategy was suggested, in part, by the results of the first year evaluation. In that study, children who viewed at home did not seem to benefit as much from the show as those who viewed in school. Although breakdown of the experimental treatment could have accounted for this, another possible explanation is that viewing circumstances affect the way children view and that teacher behavior influences the way children watch, and, therefore, the amount children learn. A similar hypothesis has been investigated by a group at Harvard University under the direction of Courtney B. Cazden. During the past year they have gathered evidence to suggest that different classroom settings affect children's attention to television and possibly children's learning from television.

In each site, the coordinator observed each experimental class several times during the time the class viewed The Electric Company. Each observation lasted one hour, including 15 minutes before the show, the half-hour of the show, and 15 minutes after the show.

Each class was observed either three or four times in Youngstown (where there were 36 experimental classes) and four or five times in Fresno (where there were 28 experimental classes).

A copy of the observation schedule is provided in Appendix G. The data from the observations yielded six indices in addition to the item-level data:

---References to show; the average number of minutes that the teacher talked about the show during the 15-minute periods immediately before and immediately after classroom viewing.

---Inattentiveness; the average number of children inattentive to the show during each two-minute interval.

---Absenteeism; the average number of children absent from the classroom during each two-minute interval.

---TV Reception; the quality of both the audio and video telecast as it was received in the classroom.

---Child Participation; the frequency of verbal responses children made to written words and songs on the show.

D. The Treatments

1. General Considerations

In order to evaluate the effects of The Electric Company, two treatment conditions were established and randomly assigned. The experimental treatment was asking teachers to have their classes view The Electric Company at the same time each day in their classrooms. The control treatment consisted of asking teachers not to have their classes view The Electric Company. Observations of the classrooms confirmed that teachers actually followed their instructions.

In Fresno, all televisions were black and white sets that were normally used as part of Fresno County's closed-circuit television system. In Youngstown, both black and white and color televisions were used. Results from the first year study indicated that class gains in reading achievement did not seem to be affected by the type of television set (color or black and white) used in the classroom.

All experimental teachers were given copies of CTW's The Electric Company Guide which was published every two weeks. It contained information about the forthcoming shows and suggestions for lessons and games for follow-up activities. No other supplies or information were provided to any teacher. The time of the show was determined by the local television station in Youngstown and by the county school system in Fresno. However, the experimental teacher could decide which school activity the show would supplant, the amount of preparation before the show, and any follow-up discussion after the show.

2. The Content of The Electric Company

The second year of The Electric Company series consisted of 130 half-hour programs. They were broadcast five days a week (Monday through Friday) for 26 weeks beginning on October 23, 1972. According to CTW,[1] the show was designed to serve second, third and fourth graders who had reading difficulties by supplementing their classroom reading instruction. Because of limitations on length of the programs and duration of the series, CTW decided to address some 40 reading goals. Appendix H contains a list of these goals for the second year show. The goals for the second year show differed slightly from those of the first year. Certain goal areas were more narrowly defined or expanded. Thus, the content analyses for the two years are not directly comparable.

CTW used an eclectic or "cafeteria" approach to teaching reading skills rather than adopting a single method of instruction. Since the show is nationally televised and teachers across the country use different teaching methods, CTW thought this approach would afford greater learning opportunities to a larger number of children. Each half-hour show was independent of the other programs in the series in the sense that previous viewing was not a requirement for understanding the material in a particular show. The show was also designed to focus on reading skills that lent themselves to television treatment.

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[1] The use of television to supplement the teaching of reading: A proposal, Children's Television Workshop, April, 1971.

In order to describe the second year show, a detailed content analysis of The Electric Company was conducted by the ETS staff as it was broadcast. Once every thirty seconds of each program, a notation was made as to the particular reading goal being taught and the particular television technique being used to present the goal. In this way, the amount of time devoted to each goal and to various production techniques over the 130 hours of television time could be specified. Separate recordings of goal and treatment were made, totalling 4508 observations. The content analysis forms used are found in Appendix H.

Tables I-4, I-5, and I-6, which are contained in Appendix I, present the results of the content analysis. Table I-4 shows the number of times and percentages of time that the 40 goal areas of the show were observed. The ten goals that make up "Processing Letter Groups as Chunks" accounted for the majority of the time spent teaching (61.0 percent). Of these ten goals, the two most emphasized were "Consonants" (11.4 percent) and "Vowel Combinations" (11.4 percent). Of the remaining 30 goals, three goals accounted for an additional 25 percent of teaching time--"Blending Words into Sentences" (9.4 percent), "Consonant Blends" (8.5 percent), and "Phonetic Sight Words" (7.7 percent).

The goals that are addressed on the show more than one percent of the total teaching time are reported in Table I-5 along with the treatments used to present them. There seems to be little difference with respect to goal presentation--most goal areas are presented by more than two types of television treatments although "People on the Set" and "Photographs or Drawings" are used more than other treatments. One goal area, "Guessing Meaning" used mainly one treatment for a large percentage of teaching time (People on the Set, 69.2 percent).

An analysis of the treatments used on the show is presented in Table I-6. In order to report the major treatment composition of the show, only treatments used more than 5 percent for any goal area are included. The two major treatment areas used were "People on the Set" (34.4 percent) and "Photographs or Drawings" (31.7 percent). Within the "People on the Set" treatment "Consonants" and "Vowel Combinations" were the major goal areas addressed. In the "Photographs or Drawings" treatment, the two major goal areas addressed were "Blending Words into Sentences" and "Consonants."

The content analysis shows that the content of this year's show differed somewhat from the content of last year's show. One of the differences noted was that the list of goal areas changed slightly for both years. Certain goals were dropped in the second year show (e.g., "Goal to Get Meaning from Writing") and others were added (e.g., "Spelling"). Certain goal areas that were included both years, such as "Consonants," appeared in the "Blending" goal area in the first year and appeared in the "Chunking" area in the second year, suggesting that a change was made in the interpretation of these goals. In addition, the time spent on direct teaching changed. There was a considerable increase in the amount of time spent on "Entertainment" which was intended to provide a positive motivational and affective milieu as well as spacing for the various goals being presented. The difference in the show's teaching pace was indicated in this comment by Andy Ferguson, the show's producer... "We're teaching more by teaching less."

In sum, because of the additions and deletions of some goal areas, and the change in emphasis and interpretation of these goals, the content analysis results for the first and second year studies are not directly comparable. However, we can look at the results for both years and conclude that although there were some changes, the basic content of the show remained the same and the same fundamental reading goals were presented by the same television techniques.

E. Description of the Sample

Fresno County, California and Youngstown, Ohio were retained as the sites for the second year study. One of the reasons that they had originally been selected was that the treatment conditions could be carefully controlled in both sites. In addition, they afforded an opportunity to look for effects of the show on children from different demographic groups. Fresno County is a rural area with a large Spanish-speaking population. Youngstown is an industrial city with a significant black component.

Within each site in the first year, classes of children were chosen at each grade level that had high proportions of "target" children. Target referred to second graders in the lower half and third and fourth graders in the lowest quarter of the population on standardized reading test norms. The sample for the second year study was primarily determined by the selection process of the first year since this is a follow-up evaluation. This year's follow-up sample was composed of 1,773 children from the first year study who were followed into their second year classrooms and 1,404 "new" children who were not part of the first year's study but who were included in the second year because they were in classrooms containing follow-up children. Tables I-7 through I-14 present summaries by frequency and by percentage of certain demographic variables for both follow-up and new children (see Appendix I).

Table I-7 contains demographic information for both follow-up and new children in second grade during the second year of this study. Table I-8 provides the same information for all sampled third grade children. It can be seen that the N's are approximately equal for the two sites in second grade; but in third grade, the Fresno sample is smaller than Youngstown's, reflecting the attentuation of classes previously reported. There are approximately equal numbers of males and females within each site and grade. With respect to sample group composition, Fresno has approximately half white and half Spanish-background children while Youngstown has about half black and half white children except in second grade where the sample contained 15 percent more white than black children. This reflects the demographic characteristics of the first year sample (see Tables 12 and 13 of the first year report).

This site difference is also indicated by the language background data for both grades. In Fresno, approximately half the children are from bilingual homes (English and Spanish) and half the children are from English-speaking homes, while in Youngstown, English is the main language reported. Age distribution of children is roughly the same for both sites within each grade.

Tables I-9 and I-10 present demographic characteristics of these same second and third grade children divided into their Year 2 treatment conditions. Small differences were noted between the experimental and control groups on variables such as sex, population group, and language background. These differences do not appear to be important or systematic, thereby providing validation of the randomization process.

Tables I-11 and I-12 describe the follow-up children by treatment groups over both years of the study (viz., EE, EC, CE, and CC). Table I-11 presents the demographic data for the first-second grade follow-up children and Table I-12 presents the same data for second-third grade follow-up children.

One difference noted in the first-second grade group in Fresno was that the proportion of females to males differed somewhat in the four groups. Note, however, that the first year report indicated that sex was not a significant moderating or interactive variable. In the Fresno second-third grade group, there was a slightly higher proportion of Spanish-background children in the CC and CE groups than in the EE and EC groups (about 60 percent to 50 percent).

Demographic descriptions of children who are new to the study are presented in Tables I-13 and I-14. In general, these data seem quite similar to the data for the group of follow-up children previously presented. There is a large difference in Year 1 viewing status between the sites.[1] More new children in Fresno in both grades viewed the first year show than new children in Youngstown. In Fresno, approximately 65 percent of the second grade children and 72 percent of the third grade children had viewed. In Youngstown, the percentages were much smaller. Only 37 percent of second graders had viewed the show in the first year and only 35 percent of third graders had viewed. Fresno County had a closed-circuit television system and teachers, including those not involved in the first year study, were encouraged to use it. In Youngstown, the show had to be viewed from normal broadcast channels and many classrooms did not have their own television sets. In fact, the experimental classes were given television sets in order to ensure their viewing. Thus, this difference between the two sites with respect to the first year viewing of children new to the study in the second year is not surprising.

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[1] Year 1 viewing was determined by asking the children if they viewed or didn't view the first year show.

In general, the demographic data presented in Tables I-7 through I-14 seem very similar among treatment conditions within each site. New children seem similar to the follow-up children. Further, the demographic characteristics of the sampled children in the follow-up study seem quite similar to those of the larger first year sample from which they were drawn. The fluctuations among treatment groups are as one would expect given that the treatments were randomly assigned. Note that the minor fluctuations reported will be minimized in later analyses because pretest scores are used as covariates to help remove any effect that these between-group differences might have caused.

CHAPTER III: THE MAJOR RESULTS

A. The Questions to be Answered

This study had for its major goal the investigation of the effects of viewing the first and second years of The Electric Company. The effects were assessed by measures described in Chapter II. The first set of specific questions (Q1-3 below) concerned the sampled children who were part of the first year study and who were followed through the second year study. Note that this set of questions refers to the impact of the first year of The Electric Company.

1. Did the immediate positive impact of the first year of The Electric Company noted in the first year study hold up for the subsample that had been followed over two years?
2. Did the positive impact of the first year of The Electric Company continue through the school summer vacation period into the first month of the following year (pretest, Year 2)?
3. Did the positive impact of the first year of The Electric Company continue through the school summer vacation period and on through the following year of school (posttest, Year 2)?

The first question was posed in order to find out whether the natural loss of subjects in the follow-up study[1] affected the general conclusions reached in the first year evaluation. The second and third questions were posed in order to ascertain the long-term impact of the first year of The Electric Company. Did the positive effects found at the end of the first year hold up over the following year irrespective of what else happened during this post-experimental[1] period? (This is the kind of question too rarely asked in evaluative research if only because most evaluations are funded to assess only immediate impact.)

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[1] To be part of the follow-up study, a subject had to have complete test data available on all four testings (pretest and posttest in both years).

The second set of specific questions concerns the effects of the second year of The Electric Company. A group of children was available from the first year study who had not viewed the show (first year control subjects), and by randomly "splitting" this group in the second year into experimental and control groups (CE and CC) it was possible to answer the question:

4. What was the impact of viewing the second of The Electric Company when this was the first exposure to the show?

There was also a group of children from the first year study who had viewed the show (first year experimental subjects) and by randomly "splitting" this group in the second year into experimental and control groups (EE and EC) it was possible to answer the question:

5. What was the impact of viewing the first two years of The Electric Company in comparison to having viewed the first year only?

Finally, because the research design called for testing whole classes and because this testing provided data on groups of children new to the study (complete test data from the second year but not part of the first year sample), it was possible to answer the question:

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[1] It was post-experimental with respect to the first year study. An experiment (the follow-up study) was in fact continuing in this second year.

6. What was the impact of viewing the second year of The Electric Company for children with varying degrees of exposure to the first year of the show? (This is a variant of Q4.)

All six questions were answered separately for each grade (first to second grade, second to third grade) in each site. Further, the second to third grade data were reanalyzed to see if the results were similar for target children (second grade children with reading achievement comparable to the lower half of their population on national norms) and for non-target children (the better readers).

There were also subsidiary questions that this evaluation provides quasi-experimental evidence on, and these will be addressed in Chapter IV. The six questions listed here were not, then, the only ones asked of the data. However, they do represent the major questions that this evaluation was designed to answer and they will be addressed in the following sections of this chapter.

B. The Data: Descriptive Statistics

The answers to the questions posed in the preceding section were based on the Electric Battery data obtained from the sampled children over four testing periods (pretests and posttests in the first and second years). A number of relatively complicated statistical procedures were performed on these data and the results of these procedures will be presented in subsequent sections. Before these presentations, however, it is useful to provide descriptive statistics (N's[1], means, and standard deviations) of the various groupings of children and of classes under consideration.

1. The Longitudinal Study

Tables I-15 to I-30[2] present the descriptive statistics that underlie the study of the longitudinal effects of the first year of The Electric Company (Q1-3, Section A above). These tables show the means and standard deviations of the scores of the children who were originally placed in experimental or control groups at the beginning of the study. The initial status of these two groups (pretest, Year 1) is presented separately for the two sites for the first-second grade study (Table I-15). The next three tables (I-16 to I-18) show the scores of these same children at the end of the first year (posttest, Year 1), at the pretest for the second year, and at the end of the second year (posttest, Year 2). Tables I-19 to I-22 parallel Tables I-15 to I-18 except that the data concern the children in the second-third grade study. Tables I-23 to I-26 and I-27 to I-30 present the data for the second-third grade children separately for those classified in the target group[1] (I-23 to I-26) and those in the non-target group (I-27 to I-30).

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[1] N's refer here to number of children--not the number of classes.

[2] See Appendix I for all tables with the prefix I.

From Table I-15 it can be seen that the first grade experimental and control groups began at similar points at the outset of the study. By the end of the first year (Table I-16) the two groups had diverged considerably in both sites in most of the tests (as the first year study reported). Following up these groups in the pretest at the start of the second year (Table I-17), one can see that the degree of divergence lessened somewhat; and that by the end of the second year (Table I-18) the divergence was still further reduced. Note, however, that during the second year the original experimental and control groups had been split so that many of the experimental children were not viewing and many of the control children were.

Tables I-19 to I-22 show similar trends for the second to third grade classes. Tables I-23 to I-30 show that both target and non-target components of these second to third grade classes followed the overall trends shown in Tables I-19 to I-22.

A few major points require emphasis in considering Tables I-15 to I-30:

. . .The pretest scores in the first year of the first-second grade groups (i.e., the first grade pretest scores in Table I-15) contain only the few items of the Electric Battery considered relevant for the children at that stage.

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[1] Lower half on national norms.

. . .The posttest of the second graders and the pretests and posttests of the third graders reveal evidence of ceiling effects in some of the goal areas (see Tables I-17, I-18, and Tables I-20 to I-30 excluding I-23 and I-27).

. . .As expected, target children performed less well on the Electric Battery than the non-target children.

. . .Scores of the second graders at posttest in the second year of the study (first-second grade group) were slightly higher than the posttest scores of the second graders in the first year of the study (second-third grade group). For example, compare Table I-18 with Table I-20.

. . .These descriptive tables are presented in order to allow readers to make their own judgments and interpretations and to provide those interested with data to carry out analyses of their own. However, it should be pointed out that these descriptive data are insufficiently analyzed to allow judgments to be made on the statistical significance of the trends and differences that can be seen.

Further statistical analyses were carried out and they are presented and described in the following sections of this chapter (Sections C and D).

2. The Effects of the Second Year of The Electric Company

Tables I-31 to I-62 contain the descriptive data relevant to the questions concerning the effects of the second year of *The Electric Company*.[1] Tables I-31 to I-38 present the data for the first-second grade study for all follow-up children divided into the four treatment groups (EE, EC, CE, and CC[2]). Tables I-31 and I-32 present the pretest, Year 1 data for these four groups for Fresno and Youngstown respectively. Tables I-33 and I-34 present posttest, Year 1 data; I-35 and I-36 the pretest, Year 2 data; and I-37 and I-38 the posttest, Year 2 data.

Tables I-39 to I-46 repeat the presentations except that the data come from the second-third grade study. Tables I-47 to I-54 repeat the presentations specifically for second-third grade target children; and Tables I-55 to I-62 for non-target children.

The general admonition again holds that these are presented as descriptive data and that the reader should not make premature judgments until the more sophisticated inferential statistical analyses are presented. Nonetheless, a number of points seem reasonably clear:

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[1] See questions #4 and #5 of Section A of this chapter.

[2] EE = viewing both years
EC = viewing first year only
CE = viewing second year only
CC = viewing neither year
Note that EE and EC together form the viewing group and that CE and CC form the non-viewing group as shown in Tables I-15 to I-30.

. . .The EE and EC groups were quite comparable at pretest and posttest in Year 1 and at pretest in Year 2. So, too, were the CE and CC groups. This was to be expected in that EE and EC groups were randomly assigned to the same treatment during the first year and did not receive different treatments until after the pretest in Year 2. The same is true for the CE and CC groups.

. . .The raw scores of the Metropolitan Achievement Tests are based on different levels of subtests (see above Chapter II, Section C, 2c.) so that they do not show the same kind of upward progression as the scores on the Electric Battery.

. . .The comments made with respect to the longitudinal study data (Tables I-15 to I-30) hold true for Tables I-31 to I-62 because this latter set of tables presents mainly a splitting out of the viewing group and non-viewing group presented in the former set.

Tables I-63 to I-66 present item level data (mean percentage correct) for the four treatment groups of the follow-up study at each of the four testing periods. These tables provide evidence on the difficulty level of items for the grades studied and can be a source of information useful for program developers.

3. Children New to the Study

The final question to be addressed in this chapter concerns non-follow-up children--those new to the study who were tested in the sampled classrooms in the second year. Some of them viewed in the first year; others did not. Separately for each site, for each grade, and for the treatment conditions in the second year (experimental/viewing or control/non-viewing), their descriptive data are presented in Tables I-67 to I-70. Note that:

. . .Their scores generally resemble those of the follow-up children in the first year of the study in the second and third grade.

. . .The experimental and control groups do not differ much at pretest and this is to be expected because they were randomly assigned to treatments.

. . .Information on how many viewed in the first year will be commented on in greater detail in Section D, 3. of this chapter.

In subsequent sections of this chapter the six questions posed in Section A will be answered using the data on which the descriptive statistics presented in this section are based.

C. The Longitudinal Effects of the First Year of The Electric Company

The general topic addressed in this section is the long-term impact of viewing the first year of The Electric Company. The first year evaluation indicated that in-school viewing had a positive, immediate impact in the two sites studied (Fresno and Youngstown) in first through fourth grade. In this follow-up study these sites were revisited and the children originally part of the study in the first year's first and second grade classes were assessed again in their new second and third grade classes.

What was the data base by which the longitudinal effects of the first year of The Electric Company could be assessed? From the first year report it can be seen that the numbers of children in the study were:

	Fresno		Youngstown	
	Experimental	Control	Experimental	Control
1st grade	207	202	270	251
2nd grade	278	299	501	505

Because of normal attrition[1] the numbers of children tested again at pretest and posttest in the second year had become:

	Fresno			Youngstown		
	Exp.	Control	Total	Exp.	Control	Total
1st grade now 2nd grade	132	142	274	190	166	356
2nd grade now 3rd grade	158	172	330	401	412	813
Total			604			1169

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[1] e.g., children moving to non-sampled classrooms or to different schools and children being absent from school during the testing period. (Unless scores were obtained from a child on all four testings, that child was dropped from the sample.)

They were situated in a total of 126 classes in 47 schools:

	Fresno	Youngstown
1st grade now 2nd grade	25 classes in 9 schools	24 classes in 10 schools
2nd grade now 3rd grade	31 classes in 9 schools	46 classes in 19 schools

In the first year evaluation, classes were the unit of statistical analysis. Within each school selected, classes were randomly assigned to either experimental (viewing) or control (non-viewing) conditions. These classes had initially been paired so that within each school was an even number of classes in the study. On returning to the same schools in the second year, it was possible to identify, in the grades under study, children categorized as experimental or control in the first year of the study. Thus, for each class in the first year study a mean score on the various tests and subtests was generated for each of the four testing periods (pretest and posttest in Year 1, and pretest and posttest in Year 2), irrespective of which classes children were in during the second year. These means were weighted for the number of subject children in the class in the particular first year treatment group so that, for example, classes with ten experimental children were not as heavily weighted as classes with twenty experimental children.[1]

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[1] Thus, in Tables I-15 to I-62, mean scores for the total number of children in each treatment group are identical to those one would compute using classes weighted by the number of children in that particular treatment group.

There were three points at which the effectiveness of the first year show could be estimated using the E and C groups--at the conclusion of the program (posttest, Year 1); at the beginning of the second year after the summer recess (pretest, Year 2); and at the end of the second year (posttest, Year 2). The three questions posed concerning the impact of the first year of The Electric Company were based on these three testing periods. The questions asked: Could the statistically significant impact noted in the first year study with the larger groups of children be observed with the longitudinal sample at each of the three test periods (see Chapter III, Section A).

Weighted analyses of covariance were carried out separately for the first-second grade study and again for the second-third grade study using as dependent variables the means from the Electric Battery and Metropolitan. The covariate was the pretest, Year 1 class mean of the dependent variable being used. The weight for each class was the number of follow-up children in the classroom.

The statistical analyses can, of course, be described at a more technical level and the following section is such a presentation. A reader may omit this section if only a general idea of the analyses is required.

The major statistical analyses for the estimation of the longitudinal effect of the first year Electric Company were [(school within site) by treatment] weighted analyses of covariance. Separate analyses were done for the first-second grade and second-third grade studies because (1) variances of the dependent variables differ in the two studies, and (2) the slopes of the regressions of the dependent variables on the covariates (variable measured at pretest, Year 1) also differed in the two studies. The unit of analysis was the classroom (i.e., a school by treatment combination since there were within each grade only 2 classrooms used in each school--one received The Electric Company, the other did not),[1] and classroom means were used as summaries. Equivalently, one could consider school the unit with a repeated measure factor "treatment" (i.e., two levels of "treatment," Electric Company viewing and control). The factor "site" has two levels, Fresno and Youngstown.

The unit of analysis was the classroom for two reasons: First, the random assignment of the treatment was by classroom--hence, the proper unit under the randomization model of inference is the classroom (e.g., see Kempthorne, 1952).[2] Second, if schools are considered to be a random factor in the mixed model analysis of variance so that we want to generalize to a population of schools from which we have a random sample (e.g., see Scheffè, 1959),[3] tests of the effect of the fixed factor "treatment" ("site" is also considered fixed) are based on the "school" by "treatment" interaction which is equivalent to considering the classroom (i.e., the school-treatment combination) as the unit of analysis.

Each unit of analysis (classroom) was weighted by the number of children in it because there were unequal N's in the school-treatment combinations (especially in later analyses dealing with the evaluation of the second year of The Electric Company), and under the usual models such weighting yields minimum variance unbiased estimates. However, this weighting implies that the analysis of variance is non-orthogonal, but this is no problem since the only effects of interest are those involving the treatment and these are properly tested and estimated after the blocking factors (i.e., "site" and "school") and the covariate.

[1] Actually some schools contributed two pairs of matched classes in one grade. This was considered to be a single pair by pooling the two E classes and the two C classes. We then weighted the pooled classes by the number of children.

[2] Kempthorne, O., Design and analysis of experiments. New York: John Wiley, 1952.

[3] Scheffè, H., The analysis of variance. New York: John Wiley, 1959.

The dependent variables for the longitudinal analyses of covariance were the grand total Electric Battery, the four subtotals, and the Metropolitan each as measured at posttest, Year 1; pretest, Year 2; and posttest, Year 2. The covariate for the total at each point was the total at pretest, Year 1 which was recorded before the random assignment of E and C treatments in Year 1; the covariate for each subtotal at each point is the corresponding subtotal at pretest, Year 1, and the covariate for the Metropolitan is the Metropolitan at pretest, Year 1. For the first-second grade study, the covariate for the Electric Battery at pretest, Year 1 was a shortened version of the Electric Battery.

For each dependent variable and each point (e.g., pretest, Year 2) the weighted analysis of covariance yielded two estimates and corresponding t-tests for the (E-C) effects of The Electric Company: one estimate for Fresno and one for Youngstown. The adjusted E and C means were calculated using these adjusted effect estimates. For example, for the grand total score in Fresno first-second grade study, the adjusted E mean at posttest, Year 1 was the grand total mean for all children in Fresno in the first-second grade study at posttest, Year 1 (i.e., the weighted classroom mean) plus half the estimated E minus C effect for the total score in Fresno in the first-second grade study at posttest, Year 1. The adjusted C mean at posttest, Year 1 was the grand total mean for all children in Fresno in the first-second grade study minus half the estimated E minus C effect for the grand total score in Fresno in the first-second grade study at posttest, Year 1. Analogous computations were carried out for the other combinations of site, grade, point in time, and dependent variable.

Analyses of covariance were used instead of raw scores or gain scores because even though all are unbiased due to the randomization, preliminary analyses showed the analyses of covariance to produce generally the most precise estimates. Only one covariate was used (i.e., the corresponding test at pretest, Year 1) rather than several (e.g., always including the Metropolitan) because preliminary analyses indicated that the additional reduction in variance using two or more highly correlated covariates was not worth the reduction in degrees of freedom.

In each repeated-measures analysis of covariance the total number of degrees of freedom were equal to 2N--twice the number of schools (two treatment groups per school). One degree of freedom was taken by the overall mean; another degree of freedom was taken by the sites and N-2 degrees of freedom were taken by the schools nested within the two sites; one degree of freedom was taken by the covariate; and two degrees of freedom were taken by the treatment effects within each site. In short, if N= the number of schools, the weighted analysis of covariance provided 2N - (N+3) residual (or error) degrees of freedom for the test of the difference between the experimental and control means for the particular variable under study.

Table 1 presents the results of the analyses of covariance for the first-second grade study across the three testing periods separated by site. The dependent variables presented are the grand total for the Electric Battery and the four subtotals that make up the grand total. As well, the scores on the Metropolitan (raw score scale) are presented.

It can be seen from Table 1 that in both Fresno and Youngstown the show had significant positive effects upon the first grade viewers at the end of the first year's viewing (posttest, Year 1). The only exception was for the Metropolitan in Fresno and there the probability of the obtained "t" value was about .07.[1] These analyses substantiate the first year study which also found, using the larger sample from which this sample was drawn, that the show had a significant positive effect in both sites.

The pretest, Year 2 results provide evidence on the effects of the first year viewing assessed some five months later with the school summer recess intervening. While the difference between adjusted means and the "t" values dropped slightly for almost every dependent variable, the statistical significance of the results was not markedly impaired. Thus, eleven of the twelve E minus C differences remained statistically significant. The first year show's effects seemed to remain substantially intact in both sites in this time period, most of which was summer recess.

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[1] All t's are one-tailed.

Table 1

Weighted, Adjusted Means for the First-Second Grade Follow-up Study, Separately by Site

FRESNO

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	75.86	68.42	7.44	2.69*	81.30	74.60	6.70	2.52*	94.96	91.65	3.31	1.68
Blending	24.45	23.03	1.42	2.56*	24.98	24.05	0.93	1.78*	26.61	25.81	0.81	2.56*
Chunking	17.27	14.72	2.55	3.20*	18.40	16.19	2.21	2.87*	22.61	21.70	0.91	1.40
Scanning	6.64	5.51	1.13	2.65*	6.98	6.11	0.87	2.32*	8.10	7.66	0.44	1.13
Reading for Meaning	26.39	24.05	2.34	1.85*	29.69	27.00	2.69	2.22*	35.93	34.78	1.15	1.34
METROPOLITAN	24.73	22.84	1.89	1.69	26.40	24.80	1.60	1.26	26.42	25.25	1.17	1.03

YOUNGSTOWN

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	77.16	64.60	12.56	4.85*	79.90	69.48	10.42	4.17*	97.14	91.11	6.03	3.26*
Blending	23.77	21.75	2.03	3.89*	23.94	22.20	1.74	3.57*	26.23	25.67	0.55	1.87*
Chunking	16.73	13.45	3.28	4.40*	17.83	14.93	2.91	4.03*	23.16	21.11	2.05	3.37*
Scanning	6.94	5.33	1.61	4.02*	7.08	5.80	1.28	3.61*	8.48	7.51	0.97	2.67*
Reading for Meaning	29.28	23.64	5.65	4.75*	30.49	26.00	4.49	3.94*	37.50	35.05	2.45	3.04*
METROPOLITAN	24.79	21.11	3.68	3.36*	26.14	22.36	3.78	3.04*	28.07	24.62	3.46	3.12*

*Significant at the .05 level (16 d.f., one-tailed)

The final set of columns in Table 1 presents the weighted, adjusted means of the E and C groups at posttest, Year 2. The interpretation of this one-year-later effect of the first year's viewing is much more difficult. This is because during the second school year both the E and C groups had been split, about half of each group viewing the second year of The Electric Company and the rest acting as controls. The effects of the first year's viewing (one year later) is therefore "muddied."

Thus, the differences observed are probably conservative estimates of what would occur given no viewing by either group in the second year. Note that in Fresno, all the differences continue to favor the first year viewers (the E-C differences remain positive). However, only in the Blending subtest was the positive difference statistically significant. In Youngstown, where the initial impact at the end of the first year had been greater, all the differences remained positive and significant a year later.

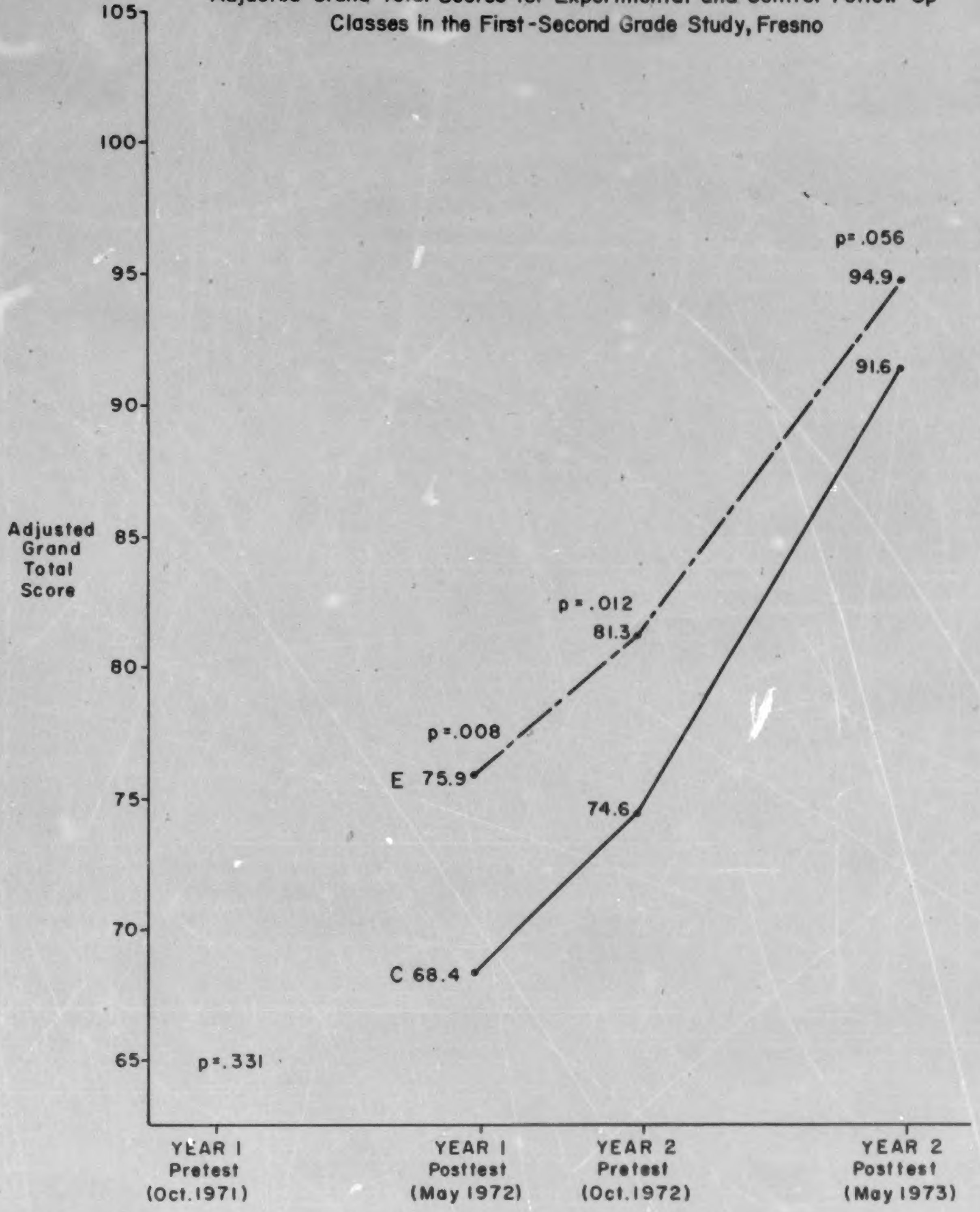
The overall conclusion about the long-term effect of the first year of The Electric Company on first grade viewers followed through second grade must be quite positive. The impact was still statistically significant on virtually every major subtest of the Electric Battery after the schools' summer recess. Even a year later the impact was clearly visible in both sites, and in one site the effect continued to be statistically significant on both the Electric Battery and the standardized Metropolitan reading subtest.

Figures 1 and 2 present graphically the grand total means presented numerically in Table 1. Figure 1 presents the longitudinal effects of the first year viewing of The Electric Company by first graders in Fresno and Figure 2 presents the data for Youngstown. Because the pretest at Year 1 was a shortened version of the Electric Battery and because this was the covariate, the E and C lines are not plotted until posttest, Year 1. However, p values for the first year pretest differences between E and C groups are indicated. The grand total means for E and C groups on later testings are presented along with the probability of the difference between these groups being due to chance (for posttest, Year 1, $p = .008$ in Figure 1 and less than .000 in Figure 2). It can be seen that over the two later testings the E and C lines converge somewhat but it can also be seen that the between group differences remained substantial and significant. The only difference that was not statistically significant at the .05 level was the posttest, Year 2 E-C difference for Fresno where the p value there was .056.

Similar tables and figures were developed to summarize the analyses for the second-third grade study. Table 2 parallels Table 1 and Figures 3 and 4 parallel Figures 1 and 2. From Table 2 it can be seen that a similar pattern emerged in the analyses of the second-third graders as was noted in the first-second grade study. At posttest, Year 1 all E-C differences were positive and significant except for lack of significance with the Metropolitan in both sites and with the Blending Total in Youngstown.

Figure I

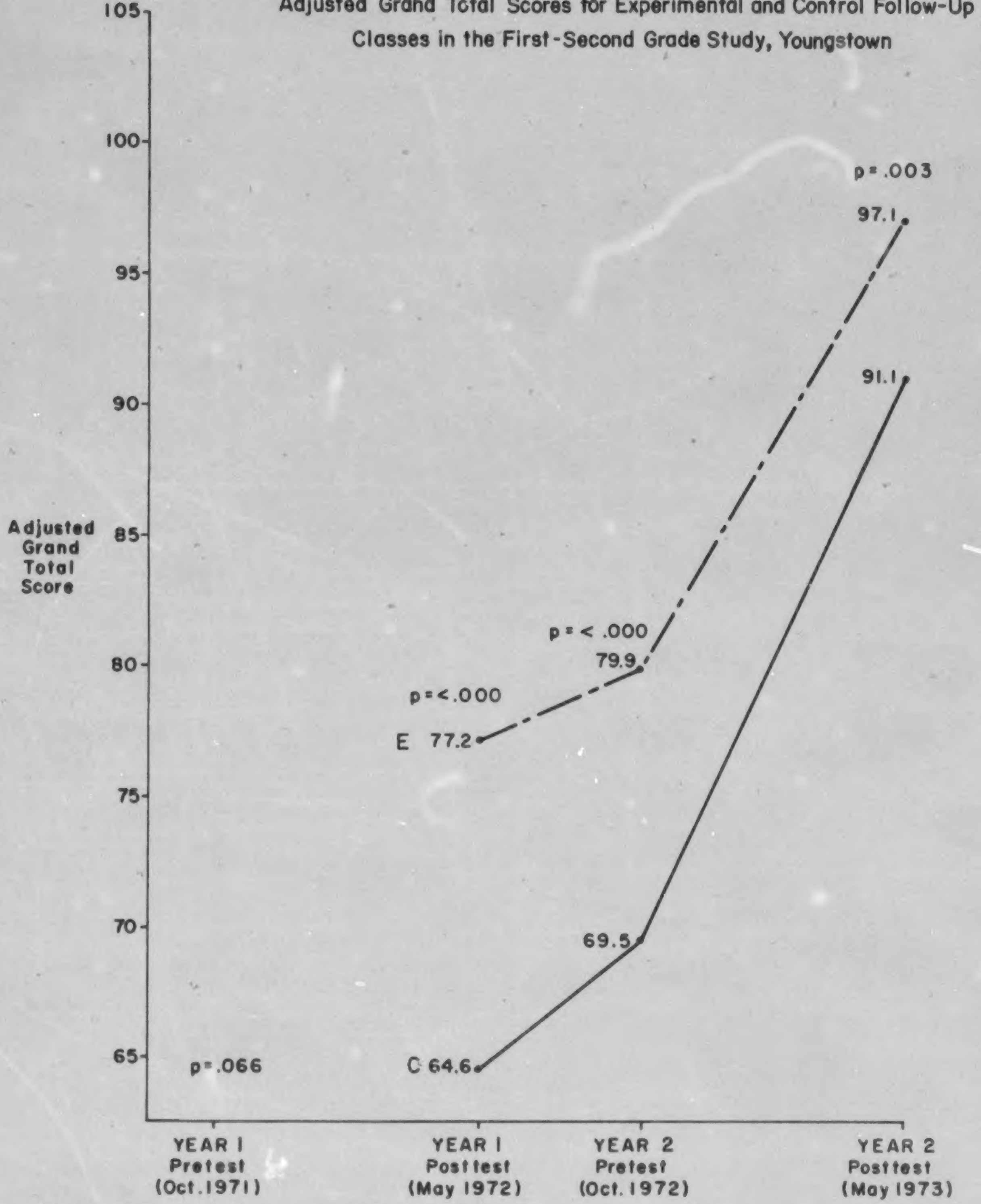
Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the First-Second Grade Study, Fresno



p-value at YEAR I Pre test is two-tailed.
All other p-values are one-tailed.

Figure 2

Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the First-Second Grade Study, Youngstown



p-value at YEAR 1 Pre test is two-tailed.
All other p-values are one-tailed.

Table 2

Weighted, Adjusted Means for the Second-Third Grade Follow-up Study, Separately by Site

FRESNO

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	88.22	80.37	7.86	5.72*	95.36	88.45	6.90	4.87*	102.47	97.31	5.15	4.05*
Blending	26.41	25.64	0.78	2.55*	26.38	26.04	0.33	1.43	27.15	26.59	0.56	2.85*
Chunking	23.30	20.32	2.98	5.48*	23.69	20.98	2.71	4.72*	25.92	23.80	2.13	3.76*
Scanning	8.39	6.76	1.62	4.17*	8.54	6.96	1.58	4.57*	8.82	7.91	0.91	3.62*
Reading for Meaning	35.11	32.10	3.01	4.56*	36.64	33.79	2.85	3.51*	39.77	37.86	1.91	3.57*
METROPOLITAN	23.49	22.28	1.21	1.47	26.05	25.58	0.47	0.65	24.11	25.39	-1.28	-1.45

YOUNGSTOWN

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	95.02	92.58	2.44	2.61*	95.92	94.25	1.67	1.73*	103.48	102.78	0.70	0.81
Blending	26.28	26.19	0.10	0.50	26.06	26.09	-0.03	-0.22	27.03	27.14	-0.11	-0.88
Chunking	22.11	21.36	0.76	2.04*	22.76	21.93	0.83	2.10*	24.96	24.63	0.33	0.87
Scanning	8.13	7.67	0.47	1.80*	8.15	7.81	0.34	1.49	8.55	8.30	0.25	1.50
Reading for Meaning	36.77	35.24	1.53	3.40*	37.22	36.23	0.99	1.79*	40.39	39.87	0.52	1.42
METROPOLITAN	25.78	25.59	0.18	0.35	27.11	26.80	0.30	0.66	28.43	27.71	0.72	1.28

*Significant at the .05 level (25 d.f., one-tailed)

The first year report noted that the impact of The Electric Company seemed strongest for first graders in Youngstown and for second graders in Fresno. Tables 1 and 2 substantiate this. Note in Table 2 that the "t" values for the E-C differences in the posttest, Year 1 are greater in Fresno than in Youngstown just as the reverse had been true in Table 1. However, in both cases it is a question of degree in that the E group invariably does better than the C group in both sites in both grades.

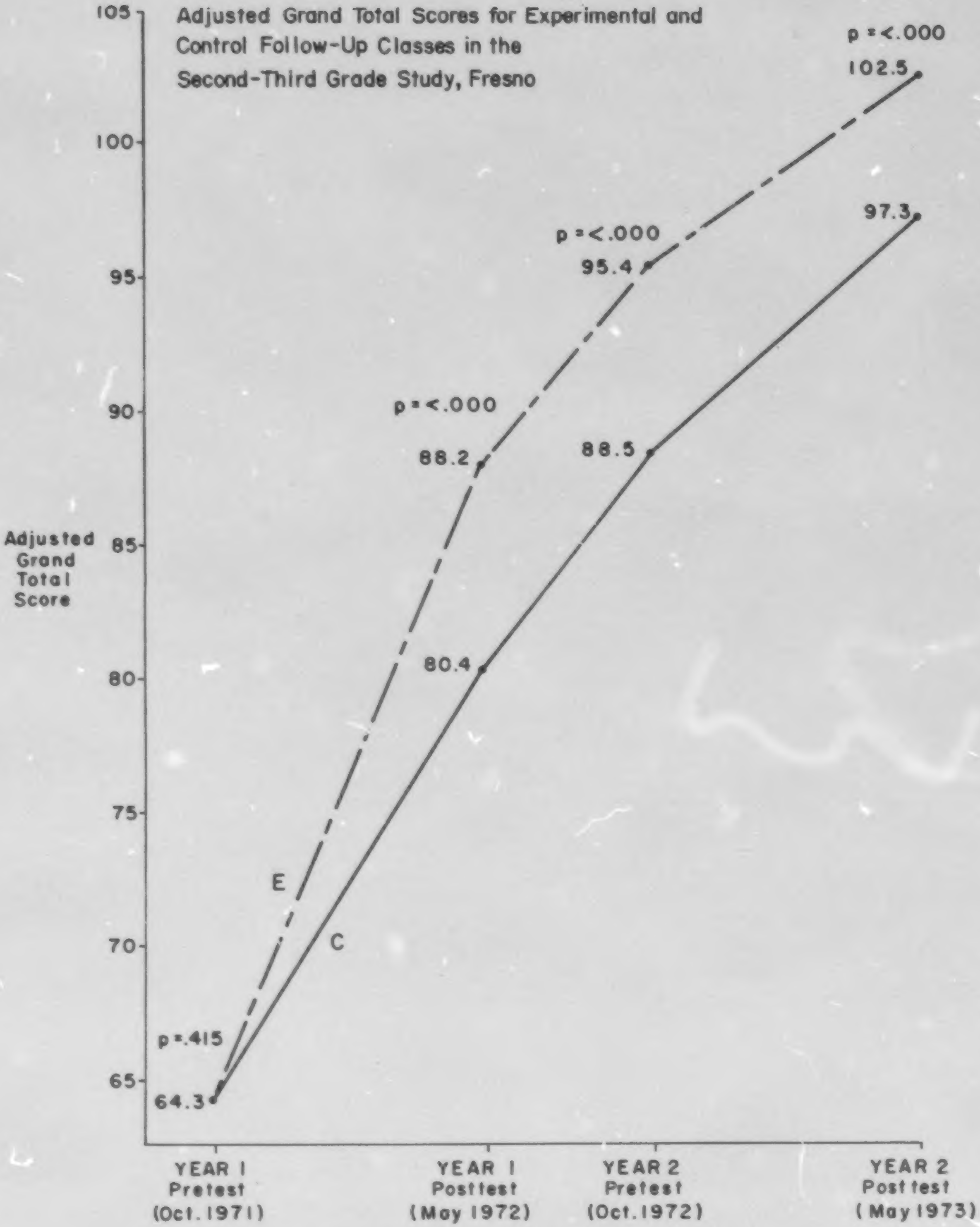
By pretest, Year 2 there is some lessening in the superior performance of the E group, but seven of the 12 "t" tests remain significant. At the posttest, Ye[illegible], the Fresno results continue to indicate a strong effect from the first year viewing as far as the Electric Battery tests are concerned (but not the Metropolitan). In Youngstown, however, the effect of the first year viewing one year later is less clear. Although five of the six E-C differences favor the E group, none are statistically significant.

Figures 3 and 4 serve to illustrate the general trends indicated in Table 2. Since the pretest in Year 1 was the same test as was used in later testings (unlike the pretest for first graders), it was reasonable in Figures 3 and 4 to indicate the pretest, Year 1 weighted mean. The covariance technique adjusts the E and C groups to a common starting point but the p values in the figures indicate the actual differences.

Note from Figure 3 that at the end of the first year in Fresno there is a 7.8 grand total mean difference favoring the E group. In the last two testings this difference is reduced somewhat to 6.9 (pretest, Year 2)

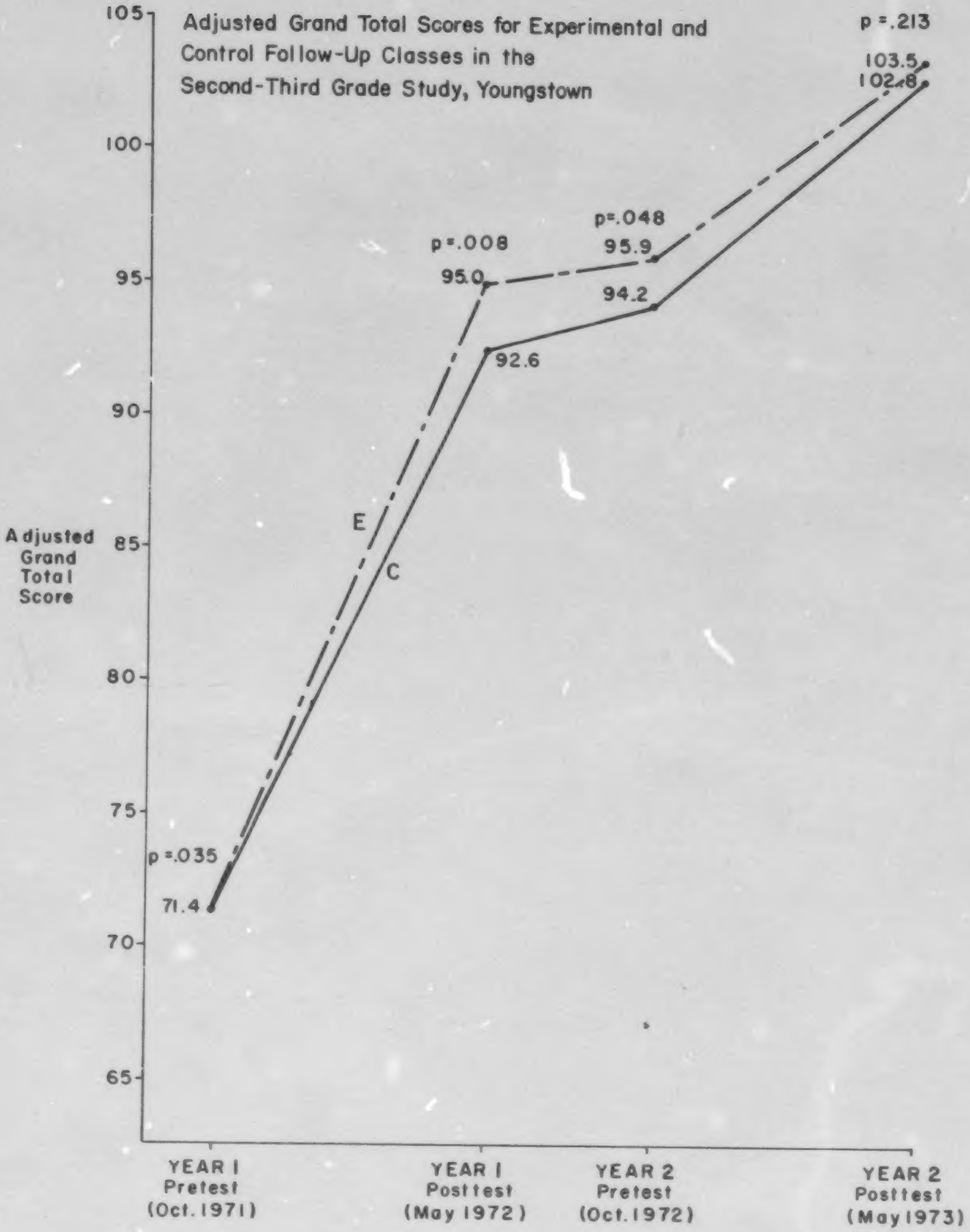
Figure 3

Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the Second-Third Grade Study, Fresno



p-value at YEAR 1 Pretest is two-tailed.
All other p-values are one-tailed.

Figure 4



Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the Second-Third Grade Study, Youngstown

p-value at YEAR I Pre test is two-tailed.
All other p-values are one-tailed.

and 5.2 (posttest, Year 2), but the level of significance remains very high. The E-C differences in Youngstown are less (see Figure 4) though they too are significant until the testing a year later (posttest, Year 2).

One point worth mentioning in reference to the two sites in the second-third grade study is that Fresno scores are somewhat lower in general for both E and C groups than those in Youngstown. In the original sampling of second grade classes in Youngstown it was necessary to choose classes in almost every school in the district to obtain the desired sample of 40 classes. Therefore, the Youngstown second grade sample in the first year contained a sizeable group of middle class children. In Fresno, there were more schools from which to choose; and it was possible to confine the sampled classes to schools where reading problems were likely to be relatively frequent. This sampling difference and the higher proportion of bilingual children in Fresno may help explain the site reversal in the first-second and the second-third grade studies. The show was intended for poorer reading second graders and seems to do best with Fresno second graders; and with Youngstown first graders.

In general, both short-term and long-term positive effects of viewing the first year of The Electric Company were found in both sites in both the first-second and second-third grade studies. The effects were generally stronger for the Electric Battery tests than for the Metropolitan. The Electric Battery tests werc designed to assess performance in the show's goal areas whereas the Metropolitan subtests used contained fewer show-specific items. The effects also lessened over time but seemed quite clear and strong at the start of the next school year and were still apparently present a year after the first year viewing (posttest, Year 2).

In order to assess the longitudinal effects of viewing the first year of the show on poorer-reading groups of children (for whom The Electric Company was primarily designed),the children in the second-third grade study were designated "target" or "non-target".[1] The target children were those who scored in the lower half on the Metropolitan Reading Achievement subtest (by national norms) at pretest, Year 1. The non-target children were those who scored in the top half. It was possible to reanalyze the data presented in Table 2 for only the target members of the E and C groups (see Table 3) and then separately again for only the non-target members (see Table 4).

From Tables 3 and 4 it can be seen that the show was more effective in the second-third grade study for target children rather than for non-target children. The effects presented in Table 3 provide strong evidence for the conclusion that a major group to benefit from viewing the first year of The Electric Company were the poorer reading (target) children in second grade. The benefit derived was sustained to some degree one year later. The better-reading (non-target) second graders (see Table 4) were not nearly as positively affected.

[1] A comparison of target and non-target groups is not appropriate for the first-second grade study because all first graders were regarded as a target group.

Table 3

Weighted, Adjusted Means for the Second-Third Grade Target Follow-up Study, Separately by Site

FRESNO

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	86.53	77.71	8.83	5.56*	89.26	81.27	8.00	4.79*	98.49	93.11	5.38	3.37*
Blending	25.84	24.74	1.10	2.99*	25.80	25.33	0.47	1.50	26.82	26.22	0.60	2.49*
Chunking	19.88	16.54	3.34	4.95*	20.49	17.44	3.05	4.69*	23.47	21.29	2.18	3.00*
Scanning	8.90	7.23	1.67	3.95*	9.28	7.42	1.86	4.39*	10.19	9.17	1.02	3.42*
Reading for Meaning	32.30	28.80	3.50	4.54*	34.07	30.70	3.37	3.78*	38.28	36.17	2.11	3.26*
METROPOLITAN	19.34	18.47	0.87	0.81	22.33	21.55	0.77	0.75	19.82	21.34	-1.52	-1.42

YOUNGSTOWN

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	88.36	85.15	3.21	2.70*	89.65	87.25	2.40	1.92*	99.43	98.77	0.66	0.56
Blending	25.54	25.51	0.03	0.12	25.34	25.34	0.01	0.04	26.65	26.85	-0.20	-1.14
Chunking	19.96	19.03	0.92	1.72*	20.65	19.79	0.86	1.66	23.66	23.35	0.31	0.54
Scanning	8.88	8.38	0.49	1.56	9.16	8.58	0.58	1.85*	10.37	10.10	0.27	1.22
Reading for Meaning	34.33	31.88	2.45	4.43*	34.84	33.22	1.62	2.54*	39.02	38.20	0.81	1.76*
METROPOLITAN	21.77	21.20	0.57	0.81	23.39	22.66	0.74	1.10	23.67	22.09	1.57	2.26*

*Significant at the .05 level (25 d.f., one-tailed)

Table 4

Weighted, Adjusted Means for the Second-Third Grade Non-target Follow-up Study, Separately by Site

FRESNO

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	107.62	104.85	2.76	1.96*	108.93	106.33	2.60	1.73*	110.82	108.30	2.52	2.07*
Blending	27.75	27.76	-0.01	-0.02	27.77	27.67	0.10	0.43	27.87	27.54	0.33	1.84*
Chunking	26.42	25.58	0.84	1.60	26.51	25.89	0.62	1.37	27.50	26.50	0.99	2.62*
Scanning	12.04	11.25	0.79	2.09*	12.05	11.53	0.52	1.23	12.41	12.15	0.26	0.79
Reading for Meaning	41.17	40.50	0.67	0.99	42.32	41.52	0.80	1.04	42.97	42.19	0.78	1.39
METROPOLITAN	33.60	30.99	2.61	1.83*	35.00	35.00	-0.01	-0.01	35.67	33.57	2.10	1.21

YOUNGSTOWN

Test	Post 1				Pre 2				Post 2			
	E	C	E-C	t	E	C	E-C	t	E	C	E-C	t
GRAND TOTAL	107.08	106.62	0.46	0.56	107.64	107.11	0.54	0.62	110.54	110.64	-0.11	-0.15
Blending	27.62	27.48	0.15	1.01	27.42	27.45	-0.03	-0.17	27.67	27.77	-0.10	-0.89
Chunking	25.94	25.84	0.10	0.34	26.43	26.13	0.30	1.14	27.16	27.19	-0.03	-0.14
Scanning	12.07	11.98	0.09	0.40	11.97	11.92	0.05	0.21	12.77	12.70	0.07	0.39
Reading for Meaning	41.42	41.36	0.06	0.16	41.81	41.63	0.19	0.42	42.94	42.98	-0.04	-0.12
METROPOLITAN	33.39	33.54	-0.16	-0.20	34.13	34.35	-0.21	-0.33	37.27	38.12	-0.86	-0.89

*Significant at the .05 level (19 d.f., one-tailed)

In sum, from the analyses of the data presented in this section it seems that the first year of The Electric Company not only had a strong immediate impact on the first-second grade sample studied but that this impact continued through the summer months into the second year. The impact remained positive but was less strong one year after the initial viewing period (at posttest, Year 2). Further analyses indicated that the children more positively affected in the second-third grade study were the "target" (poorer reading) group.

D. The Effects of Viewing the Second Year of The Electric Company

The previous section focussed on the short- and long-term effects of viewing the first year of The Electric Company. We now turn to the analyses that include the second year effects. At the start of the second year of the study those classes in each school with sampled children from the first year study were either assigned to the experimental treatment (viewing the second year of The Electric Company) or to the control (non-viewing) treatment. This longitudinal design allowed the effects of viewing the show in the second year to be assessed with three different groups of children:

1. Children who did not view the show in the first year (control children in the first year study). Their classes were randomly split in the second year so that about half these children viewed the second year show (CE) and the other half did not (CC). This allows us to study the effects of viewing the second year given no viewing of the first year (CE versus CC).
2. Children who viewed the show in the first year (experimental children in the first year study). Their classes, too, were randomly split in the second year so that about half viewed (EE) and the others did not (EC). This allows us to study the effects of viewing the first and second years in comparison to viewing the first year only (EE versus EC).
3. Children who entered the sampled experimental or control classes in the second year of the study ("new" children). Some of these children had viewed in the first year and some had not and in both

E and C classes there was a mixture of these children. This allows us to study the effects of viewing the second year in classes where such a mixture of children exists.

Actually, all three random splits occur simultaneously since the randomization was by classroom and each class contained first year experimental and control children and some children new to the study. We will examine the data for these three groups in turn.

1. The Effects of Viewing Only the Second Year of The Electric Company

The control group from the first year study was split at the start of the second year. Pretest, Year 2 represents the last testing point before the group received different treatments, some viewing (CE) and some remaining controls (CC). A comparison of their posttest, Year 2 scores assesses the effects of viewing the second year show.

For each school in the study the mean pretest, Year 2, and posttest, Year 2, scores of the CE and CC children were computed and weighted by the number of children in their respective groups. Separately for each grade, analyses of covariance of the weighted posttest, Year 2 means were conducted for the Electric Battery (grand total and subtest totals) and the Metropolitan Achievement subtest using the corresponding pretest, Year 2 mean as covariate. A more technical description of the analyses of covariance used in this part of the study is now presented. Again, a reader may omit this section if only a general idea of the analyses is required.

The major statistical analyses for the estimation of the effect of the second year of The Electric Company for those children who had not viewed the first year was a (school within site) by treatment weighted analysis of covariance, similar to that described in Section C. Separate analyses were done for the first-second grade and the second-third grade studies (see Section C for the rationale). The unit of analysis was a school-treatment combination, or equivalently a school with a repeated measure factor "treatment" having two levels: "CE" and "CC." The reasons for doing the analyses on classroom means are given in Section C (note that the randomization in Year 2 is again at the classroom level). The weight for each unit is the number of children in that school-treatment combination.

The same five dependent variables as in the longitudinal study were used but only as measured at posttest, Year 2. The covariate was the same dependent variable as measured at pretest, Year 2 (before the random assignment of children into CE and CC treatments). For each dependent variable at posttest, Year 2 and for both studies, the analysis gave the estimated CE minus CC effects and corresponding tests for Fresno and Youngstown. The adjusted CE and CC means at posttest, Year 2 were calculated using those effect estimates and the adjusted C means at posttest, Year 2 from the longitudinal analysis, e.g., the adjusted CE mean for the Metropolitan (at posttest, Year 2) in the second-third grade study in Youngstown was the adjusted C mean for the Metropolitan at posttest, Year 2 in the second-third grade study in Youngstown as calculated from the longitudinal effects analysis, plus half the CE minus CC effect for the Metropolitan from the above analysis using pretest, Year 2 as a covariate; the adjusted CC mean was calculated in the same manner except that the "plus half" becomes "minus half..."

The adjusted means were found analogously for the other combinations of site, grade, and dependent variable. The C mean at posttest, Year 2 from the longitudinal analysis was used to estimate the CE and CC means rather than the raw C mean at posttest, Year 2 because, as stated in Section C, the covariate adjusted means were found to be more precise than the raw means.

Analyses of covariance rather than analyses by raw scores or gain scores were used for the same reasons as given in Section C. The pretest, Year 2 value of the variable was used as the covariate rather than the value at pretest, Year 1 or posttest, Year 1 because it was more highly correlated with the value at posttest, Year 2 and still was recorded before the initiation of second year treatments. Only one covariate was used because the use of another pretest, Year 2 variable or the same variable at pretest, Year 1 or posttest, Year 1 did not reduce the variance enough to compensate for the reduction in degrees of freedom.

Table 5 presents the means at posttest, Year 2 for the CE and CC groups for both sites and both grades adjusted for pretest, Year 2. It also presents the differences between those weighted, adjusted means and the "t" statistics for those differences.

In second grade (the second year of the first-second grade study) there seemed to be no systematic effect in Fresno, and a slight advantage to the viewing group in Youngstown. In Fresno, the CC group outperformed the CE group on the Metropolitan but the reverse was true for the grand total on the Electric Battery. In Youngstown, all six comparisons favored the viewing (CE) group but there was statistical significance only with respect to the Blending subtotal.

In third grade (the second year of the second-third grade study) there was a clearer indication of benefit for the viewing groups. In Fresno, five of the six comparisons favored the viewing group and two of these (Blending and Scanning) were significant. In Youngstown, the differences between the groups were all marginal and non-significant.

Across the 24 statistical comparisons presented in Table 5, 17 were in favor of the CE group; however, only three of these were statistically significant.

TABLE 5

Weighted, Adjusted Means at Posttest, Year 2 for the C-split Follow-up Classes, Separately by Site and by Grade

Test	GRADE 2							
	FRESNO				YOUNGSTOWN			
	CE	CC	CE-CC	t^1	CE	CC	CE-CC	t^1
GRAND TOTAL	91.80	91.50	0.30	0.16	92.75	89.48	3.27	1.64
Blending	25.75	25.87	-0.12	-0.40	26.03	25.32	0.72	2.31*
Chunking	22.30	21.09	1.21	1.47	21.56	20.66	0.91	1.04
Scanning	7.58	7.73	-0.16	-0.32	7.64	7.38	0.26	0.52
Reading for Meaning	34.69	34.86	-0.17	-0.14	35.52	34.58	0.94	0.79
METROPOLITAN	23.90	26.60	-2.70	-2.45	24.80	24.44	0.36	0.33

Test	GRADE 3							
	FRESNO				YOUNGSTOWN			
	CE	CC	CE-CC	t^2	CE	CC	CE-CC	t^2
GRAND TOTAL	98.11	96.51	1.61	1.02	102.87	102.69	0.18	0.15
Blending	26.95	26.23	0.73	2.65*	27.12	27.17	-0.04	-0.20
Chunking	24.04	23.55	0.49	0.98	24.65	24.60	0.05	0.14
Scanning	8.14	7.68	0.46	1.73*	8.47	8.12	0.34	1.70
Reading for Meaning	37.83	37.89	-0.06	-0.07	39.80	39.95	-0.14	-0.21
METROPOLITAN	25.68	25.10	0.58	0.44	28.20	27.22	0.98	0.98

*Significant at the .05 level: (t^1 = 14 d.f., one-tailed)

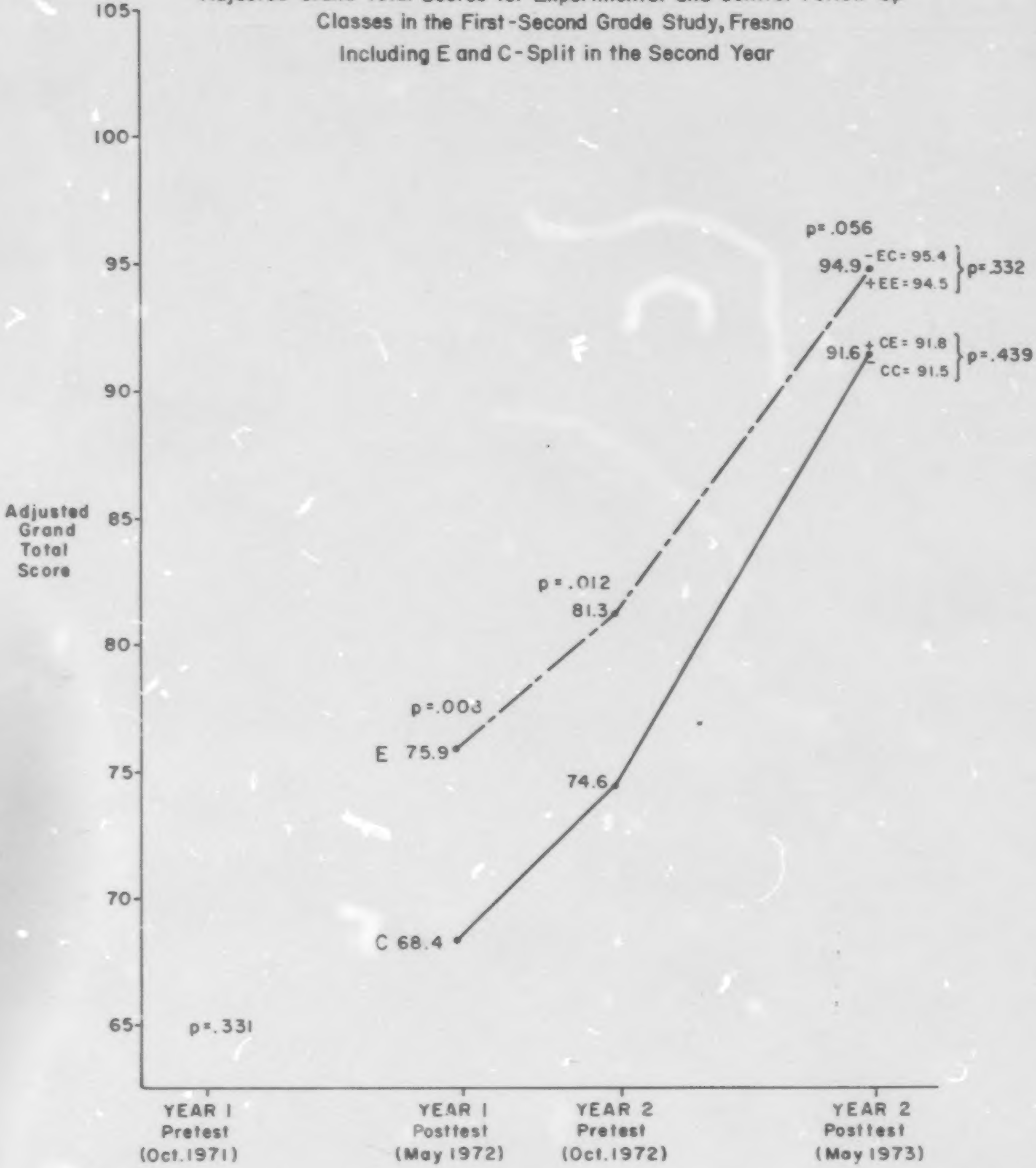
(t^2 = 21 d.f., one-tailed)

Figures 5-8 indicate graphically these results for the Electric Battery grand total adjusted means. Figures 5-8 correspond to Figures 1-4 except that the CE-CC (and EE-EC) comparisons are added. The common point indicating the status of the two groups (CE and CC) at the beginning of the second year is the position of the C group at pretest, Year 2. Note that the CE groups are higher at posttest, Year 2 than the CC groups in all four figures. The difference between the two groups in each figure represents the positive impact of viewing the second year of The Electric Company for these groups that did not view the first year.

In general, it would seem that the posttest, Year 2 CE minus CC differences (the effects of viewing only the second year) were not as large as those caused by the first year viewing. That is, the CE minus CC differences were not as large, in most cases, as effects of the first year show measured one year later. However, note that in this study we can isolate only the effects on second and third grade children. As we saw in the first year evaluation, the first year's show had its greatest impact on first graders and on second graders who were poorer readers. Note, too, that the numbers of children in the CE and CC groups per grade and per site were much smaller than in the first year study. In general, one can expect greater difficulty in obtaining significant results with lower N's. Nonetheless, although the second year of the show had a positive impact, it did seem to have less impact than the first year show even when all these considerations are taken into account.

Figure 5

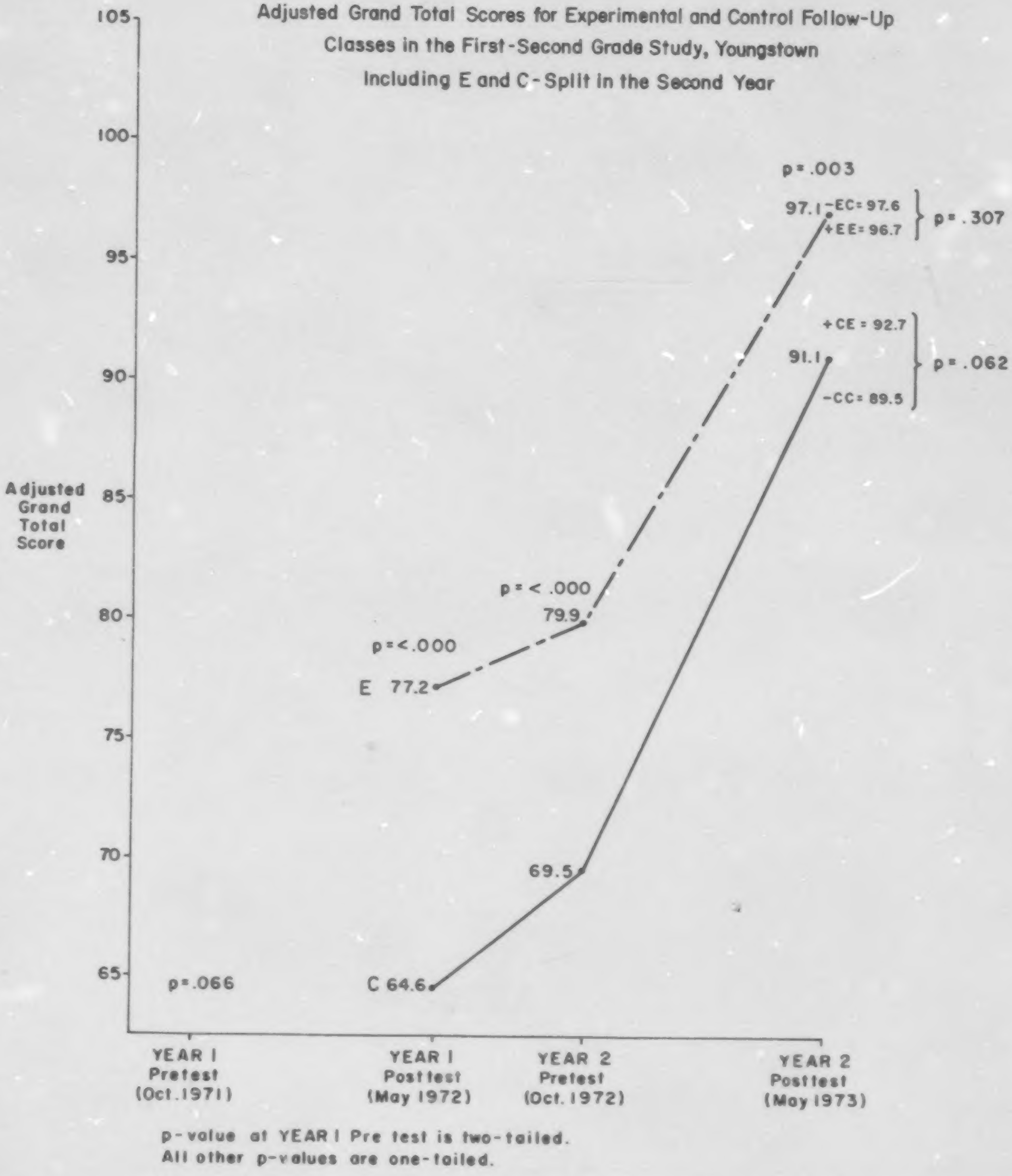
Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the First-Second Grade Study, Fresno Including E and C-Split in the Second Year



p-value at YEAR I Pre test is two-tailed.
All other p-values are one-tailed.

Figure 6

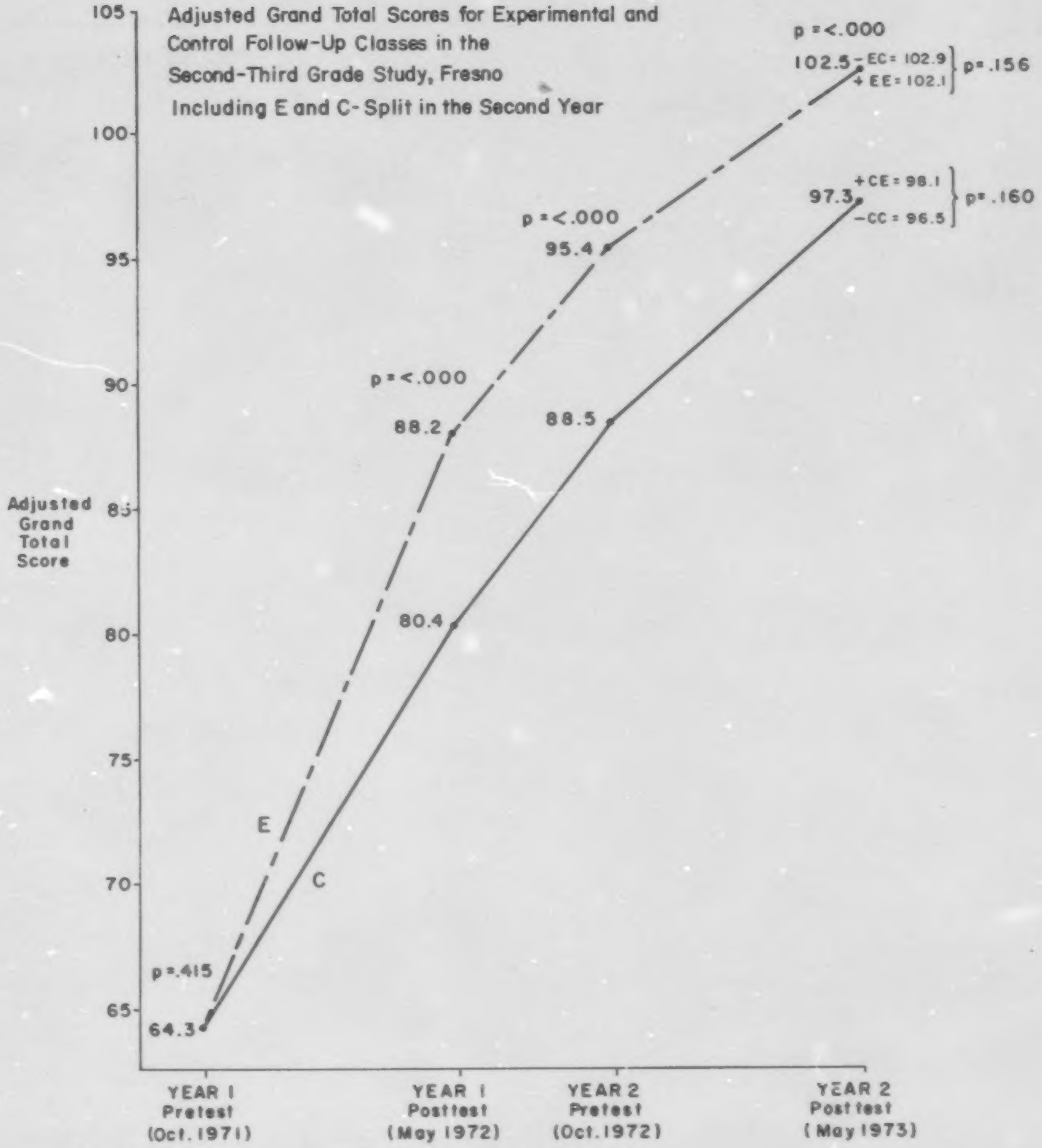
Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the First-Second Grade Study, Youngstown Including E and C-Split in the Second Year



p-value at YEAR 1 Pre test is two-tailed.
All other p-values are one-tailed.

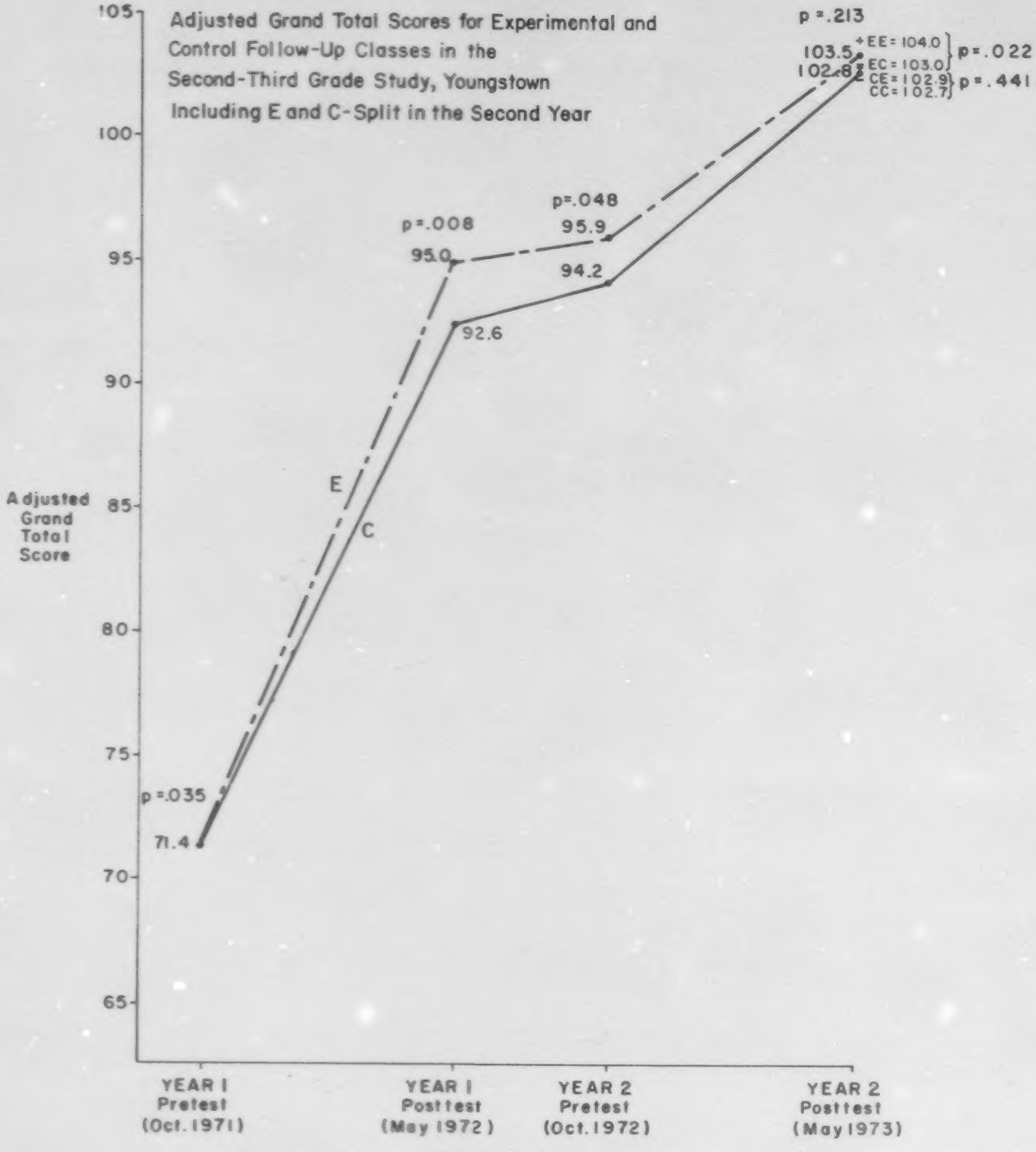
Figure 7

Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the Second-Third Grade Study, Fresno Including E and C-Split in the Second Year



p-value at YEAR 1 Pretest is two-tailed.
All other p-values are one-tailed.

Figure 8



Adjusted Grand Total Scores for Experimental and Control Follow-Up Classes in the Second-Third Grade Study, Youngstown Including E and C-Split in the Second Year

p-value at YEAR 1 Pre test is two-tailed.
All other p-values are one-tailed.

2. The Additional Effects of a Second Year of Viewing The Electric Company

Just as the previous comparison used the first year's control children to study the effects of the second year of the show, so it is possible to use the first year's experimental (viewing) children to estimate effects of two year's viewing over one year's viewing. The first year E group was randomly split at the start of the second year, about half being in classes which viewed the second year show (EE) and half being in second year control classes (EC).

The posttest, Year 2 weighted means of these groups were adjusted for their relevant pretest, Year 2 means using an analysis of covariance design. Of course, the EE and EC groups both came from the E group of Year 1; and they were randomly assigned to treatments in the second year. Thus the pretest, Year 2 scores can legitimately be used as covariates.

The technical description of the major statistical analyses for the estimation of the effects of the second year of The Electric Company for those children who viewed the first year show, the "E-split" analyses, is identical to that given above for the "C-split" analyses with the group "EE" replacing "CE" and the group "EC" replacing "CC". The results of the "E-split" analyses are presented in Table 6.[1]

The second grade results indicate that there is no noticeable benefit derived from two year's viewing over one year's viewing, or to be more precise, viewing the first and second years of the show over viewing the first year only. In fact, there is some evidence that the reverse may be true in that the EC group outperformed the EE group on ten of the twelve comparisons at the end of second grade in the first-second grade study. Note, however, that none of the differences are statistically significant.

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[1] When an EC group outperforms the comparison EE group, the difference score is preceded by a minus sign.

TABLE 6

Weighted, Adjusted Means at Posttest, Year 2 for the E-split Follow-up Classes, Separately by Site and by Grade

Test	GRADE 2							
	FRESNO				YOUNGSTOWN			
	EE	EC	EE-EC	t^1	EE	EC	EE-EC	t^1
GRAND TOTAL	94.51	95.41	-0.90	-0.44	96.68	97.60	-0.92	-0.52
Blending	26.62	26.61	0.01	0.01	26.01	26.44	-0.43	-1.19
Chunking	22.24	22.98	-0.74	-0.99	23.07	23.26	-0.19	-0.29
Scanning	8.35	7.85	0.50	0.93	8.45	8.52	-0.06	-0.13
Reading for Meaning	35.57	36.29	-0.72	-0.64	37.27	37.72	-0.45	-0.45
METROPOLITAN	26.03	26.81	-0.78	-0.64	27.53	28.62	-1.09	-1.04

Test	GRADE 3							
	FRESNO				YOUNGSTOWN			
	EE	EC	EE-EC	t^2	EE	EC	EE-EC	t^2
GRAND TOTAL	102.07	102.86	-0.79	-1.04	104.01	102.95	1.05	2.14*
Blending	27.19	27.11	0.09	0.31	27.22	26.84	0.38	2.06*
Chunking	25.80	26.05	-0.25	-0.58	25.25	24.67	0.58	2.08*
Scanning	8.74	8.90	-0.17	-0.59	8.72	8.38	0.33	1.86*
Reading for Meaning	39.50	40.05	-0.55	-0.99	40.33	40.46	-0.13	-0.35
METROPOLITAN	24.59	23.63	0.96	1.05	28.58	28.29	0.30	0.51

*Significant at the .05 level: (t^1 = 14 d.f., one-tailed)
(t^2 = 23 d.f., one-tailed)

For the second-third grade study, beneficial effects are indicated in Youngstown but not in Fresno when two years of viewing are compared to the first year's viewing. However, even in Youngstown where four of the six third grade comparisons significantly favored the EE group, the size of the differences was not large (1.05 points for grand total). Figures 5-8 show graphically the direction and size of the effects for the grand total on the Electric Battery.

Failure to obtain systematic positive results in the EE minus EC comparisons seems to indicate that given the finite goals of the show and the less dramatic evidence of the second year's series, one year's viewing was probably as effective as two years' during the first and second, or, second and third grades. One might make the analogy with a basal reading series. Even though one of the books in the series provides content which is effectively presented, few educators would presume to use this book year after year with the same group of children. There has to be a time when the children have generally mastered the content and ought to move on to something more advanced. The same kind of argument may well be true for the question of two versus one year's viewing of The Electric Company. For most children it would probably be as well (but no better) to go on to new activities in a second year as to watch the show again. Note that for reasons of cost some repetition of materials occurred across years in the show, and many of the show's goals remained constant. One might speculate on the potential advantage of an Electric Company II for poor reading third and fourth graders with more advanced content.

In order to see whether there were differential effects for two versus one year of viewing depending on the level of reading achievement of the viewer, the analyses of covariance were rerun separately for the target children. (This could only be done in the second-third grade study because all first grade children were categorized as target.)[1] Table 7 presents the analyses.

It can be seen from Table 7 that the non-target groups seem to do slightly better than the target groups in the two versus one year viewing comparisons. This is true for both study sites. However, by the end of the third grade both target and non-target children had mastered much of the content of the show as measured by the Electric Battery. Thus, the minor differences favoring the non-target groups in this two-versus one-year viewing study concern relatively few items. As was noted in the first year study, because of ceiling effects occurring by third grade, any benefit to viewing can only be seen with respect to a few items; and it is quite possible these items are better suited to non-target third graders.

[1] Note that in this report all the target and non-target analyses that are presented define target and non-target groups at the start of the first year of the study (pretest, Year 1). In some instances (e.g., first-second grade study or the C-split analyses) this definition has meant that target and non-target analyses are inappropriate. Thus, all first graders are target, and in the "C-split" second-third grade study, the target group in second grade at the start of the study (lower half) is not the same as the target group in the second year of the study when the C-split occurs and the children have moved on to third grade (lowest quarter). When the target and non-target analyses would have been inappropriate they were not carried out. Note that one could define the target and non-target groups in different ways and at different testing periods but in the interests of keeping this report within reasonable bounds of time, cost, and complexity, this was not done.

TABLE 7

Weighted, Adjusted Means at Posttest, Year 2 for the E-split Target and Non-target Follow-up Children, Separately by Site

	TARGET				NON-TARGET			
FRESNO	EE	EC	EE-EC	t^1	EE	EC	EE-EC	t^2
GRAND TOTAL	97.36	99.62	-2.25	-1.85	111.33	110.30	1.03	1.62
Blending	26.82	26.81	0.01	0.03	27.91	27.83	0.08	0.38
Chunking	23.23	23.72	-0.49	-0.80	27.66	27.34	0.32	0.76
Scanning	9.95	10.43	-0.48	-1.13	12.56	12.25	0.31	1.19
Reading for Meaning	37.65	38.90	-1.25	-1.43	43.16	42.79	0.37	1.01
METROPOLITAN	20.22	19.42	0.80	0.71	36.95	34.40	2.56	1.78*
YOUNGSTOWN	EE	EC	EE-EC	t^1	EE	EC	EE-EC	t^2
GRAND TOTAL	99.98	98.89	1.09	1.41	111.03	110.04	0.99	2.17*
Blending	26.96	26.34	0.61	2.61*	27.76	27.58	0.18	1.10
Chunking	23.95	23.38	0.57	1.52	27.54	26.82	0.72	2.55*
Scanning	10.46	10.28	0.18	0.69	13.01	12.54	0.47	2.38*
Reading for Meaning	39.00	39.03	-0.03	-0.06	42.85	43.03	-0.18	-0.75
METROPOLITAN	23.71	23.63	0.08	0.12	37.14	37.40	-0.26	-0.25

*Significant at the .05 level: (t^1 = 21 d.f., one-tailed)
(t^2 = 15 d.f., one-tailed)

We shall return to the question of the optimal viewing period in Chapter IV when the decile analysis is presented. From the evidence already presented in this section for the sample as a whole, the first year's viewing provided the major impact and the second year, while probably doing no harm, was not important. This seems to be generally true for both target and non-target children.

3. The Effects of the Second Year of The Electric Company on Children New to the Study

The classes sampled in the second year of this follow-up study contained children who had either been experimental or control children in the first year study. But, since all the children were tested in each class sampled, data on children who had not been part of the first year sample were also collected in the second year. This section presents the analyses carried out on the data obtained from these "new" children. The new children were either transfers from other school systems or were in non-sampled classrooms in the Fresno or Youngstown systems during the first year study.

The demographic characteristics for the groups are presented in Tables I-13 and I-14. Their mean scores are presented in Tables I-67 and I-70. From Tables I-13 and I-14 it can be seen that many new children in both grades in both sites viewed during the first year. An abstract indicates:

New Second Graders (first-second grade study)

	Fresno		Youngstown	
Year 2 Treatment:	Experimental	Control	Experimental	Control
Viewed Year 1	64.9%	67.4%	38.3%	28.4%
Didn't View	33.3%	30.5%	58.5%	67.9%
Don't Know	1.8%	2.1%	3.2%	3.7%
New Third Graders (second-third grade study)				
Viewed Year 1	71.6%	73.0%	67.2%	49.7%
Didn't View	28.4%	19.1%	28.5%	43.8%
Don't Know	0.0%	7.9%	4.4%	6.5%

These percentages are based on data obtained at pretest, Year 2. Classroom teachers asked the children if they had viewed at all during the first year of the show. The percentages can only be considered as approximate indicators; but two reasonable conclusions can be drawn:

. . .More of the new children had viewed in the first year in Fresno than in Youngstown. This is consistent with the higher availability of televisions in classrooms in the Fresno site. Children from Fresno first year non-sampled classrooms were quite likely to have viewed the show.

. . .The random allocation of classes to treatments seems to have ensured comparable groups with respect to first year viewing except in third grade, Youngstown where a higher proportion of the experimental than control new children claimed to have viewed in the first year.

Whereas the CE versus CC study examined the effects of viewing only the second year of the show, and whereas the EE versus EC study examined the effects of two year's viewing in comparison to one year's viewing, this study will examine the effects of viewing the second year of The Electric Company on groups of children, some of whom had viewed, and some of whom had not viewed the first year. This situation is more probably akin to the typical classroom at the beginning of a school year than one in which none or all of the children had previously viewed.

The analyses of covariance of the new children data parallel those presented in the previous sections of this report. For each school in each site there was a group of second grade new children who viewed the second year show and a group of new children in control classrooms. It was possible, therefore, to establish a mean pretest and a mean posttest score on the dependent variables. This was also done for the new third grade children in the second-third grade study. The technical description of the inferential analyses for the new children is very similar to that provided above for the "E-split" and "C-split". The first difference is that "New E" replaces "CE" or "EE" and "New C" replaces "CC" or "EC". The second difference is that the adjusted "New E" mean at posttest, Year 2 (for a site, grade, dependent variable) is calculated as the grand mean at posttest, Year 2 (for that site, grade, dependent variable) for all new children plus half the "New E minus C" treatment effect estimated using pretest, Year 2 as a covariate (for that site, grade and dependent variable), and minus half for the adjusted C mean. This procedure was used because we have no better estimate of the new children's grand mean at posttest, Year 2, than the raw grand mean, since there is no pretest or posttest, Year 1 data on which to covary. Table 8 presents the results of the analyses of covariance for the new children.

It can be seen from Table 8 that 21 of the 24 comparisons favor the E (viewing) children and ten of these are significant. Both the Fresno and Youngstown grand totals are significant for third grade and the Youngstown third grade Metropolitan is also significant. Thus, although the positive differences between the E and C groups are not large in an absolute sense, there seems little doubt that in general the show was beneficial to the groups who viewed in these four experiments (two grades in two sites).

TABLE 8

Weighted, Adjusted Means at Posttest, Year 2 for the New Children in Second and Third Grade, Separately by Site

Test	GRADE 2							
	FRESNO				YOUNGSTOWN			
	E	C	E-C	t^1	E	C	E-C	t^1
GRAND TOTAL	92.88	91.24	1.65	1.21	88.33	87.15	1.18	0.72
Blending	26.22	26.13	0.09	0.35	25.27	25.19	0.08	0.23
Chunking	22.21	21.25	0.96	1.85*	20.29	20.07	0.22	0.35
Scanning	9.81	9.16	0.65	2.59*	8.90	8.95	-0.05	-0.16
Reading for Meaning	34.74	34.60	0.15	0.22	33.75	33.06	0.69	0.86
METROPOLITAN	24.55	24.23	0.32	0.29	22.99	23.07	-0.08	-0.06

Test	GRADE 3							
	FRESNO				YOUNGSTOWN			
	E	C	E-C	t^2	E	C	E-C	t^2
GRAND TOTAL	102.89	99.66	3.23	2.19*	99.99	97.60	2.39	1.96*
Blending	27.19	26.68	0.51	2.13*	26.65	26.37	0.28	1.40
Chunking	24.90	23.60	1.29	2.33*	24.18	23.07	1.11	2.41*
Scanning	11.30	10.22	1.07	3.39*	10.78	10.26	0.52	1.91*
Reading for Meaning	39.72	38.94	0.78	1.21	38.40	37.89	0.50	0.94
METROPOLITAN	26.26	27.13	-0.87	-0.78	26.23	24.54	1.68	1.78*

*Significant at the .05 level: (t^1 = 14 d.f., one-tailed)
(t^2 = 24 d.f., one-tailed)

In general, this result is consistent with those obtained in the C-split and E-split studies. Thus, when none of the children in a class were viewers in the first year, the second year's viewing had a positive impact. When all the children in a class were viewers in the first year, the second year's viewing had little noticeable positive impact. Here we are studying classes that fall between the extremes of all viewing or none viewing in the first year. Thus, it is not surprising that some positive benefit was found.

One can generalize that if a teacher has a second or third grade class in which some of the children had viewed The Electric Company the previous year, it would be reasonable to assume benefit if that class were to view. Another and potentially better solution might be to let non-viewers now view and to use other enrichment and remediation programs with those who had viewed previously.

CHAPTER IV: SUPPLEMENTARY RESULTS

This chapter is divided into three sections. Section A presents the results obtained from further analyses of the children's scores on the Electric Battery, Metropolitan Achievement Test, and the particular standardized reading test administered to the children as part of the school systems' regular testing program.

Section B presents analyses of data from the teacher questionnaires and classroom observation records and Section C relates the teacher questionnaire and observation record data to the student performance data.

A. Further Analyses of the Electric Battery Data

The questions that this section will address are:

[1]7. Did The Electric Company lower the percentage of children designated "target"?

8. Did The Electric Company have differential effects on children depending on their prior-viewing level of reading achievement?

9. Did The Electric Company affect the reading scores the children received in the regular standardized testing program operating in their schools?

These are important questions; but the research design does not enable as rigorous an experimental or measurement approach to answering them as was achieved in answering the questions posed in Chapter III because the analyses do not follow naturally from the randomization. Nonetheless, the following results provide useful evidence if interpreted with care.

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[1] Following the six questions already posed in Chapter III.

7. Did The Electric Company lower the percentage of children designated "target"?

Table I-71 provides information on the follow-up sample in both studies in both sites. In the first-second grade study, for purposes of argument, we designated the 50th percentile (national norm) as a reasonable cut-off point for classifying first grade children into target groups. Note that, in fact, all first graders were designated "target" by CTW, but for us to do so here would "spoil" the argument--for we are attempting to see, over both first and second grade, if viewing helps the poorer (target) readers. By using the 50th percentile for the cut-off point for first graders as well as the second graders, we were able to make a clearer follow-up comparison.

In the second-third grade study, there was a less clear comparison because while the 50th percentile was the cut-off point for second graders, the 25th percentile was already classified as the cut-off point for third graders.

Before discussing the results, a word of caution is needed. As indicated in Chapter II, various reading subtests of the Metropolitan Achievement Test were used, as appropriate, at pretest and posttest at the various grade levels. Thus, at best, the results provide only an imprecise indication of whether viewing the show helped reduce the percentage of poorer readers, because different subtests had to be used for the same children when tested at different times.

In Table I-71, the results are presented by viewing group. In Fresno in the first-second grade study the EE group had the greatest percentage of target children (66.7 percent) at pretest, Year 1. However, by posttest, Year 2, this group had, barely, the smallest (50.0 percent). In Youngstown the EE and EC groups reduced their percentages of target children over the two years (16.7 percent and 19.3 percent respectively). The CE and CC groups which started with somewhat higher percentages of target readers reduced theirs 12.7 percent and 14.0 percent respectively. In general, there seems to be a slight trend favoring the EE and EC groups in both sites in the first-second grade study.

In the second-third grade study (the lower section of Table I-71) there is a more marked picture favoring the EE and EC groups in both sites. In Fresno, for example, the EE and CC groups began at pretest, Year 1 with identical percentages of target children. However, the EE group made its gain in the first year of viewing. Abstracting from Table I-71 we note these figures favoring the EE group:

	Target=50th Percentile		Target=25th Percentile	
	Pre Yr 1	Post Yr 1	Pre Yr 2	Post Yr 2
EE	74.5	52.0	32.4	35.3
CC	74.5	73.5	54.1	43.9

In Youngstown, first year pretest differences make comparisons across the two years more difficult. However, the drop in percentages in the target group is relatively larger for the EE and EC groups, especially in the first year.

While the evidence is not strong it does suggest that viewing The Electric Company may have beneficial effects in lowering the percentage of children designated "target."

8. Did The Electric Company have differential effects on children depending on their prior-viewing level of reading achievement?

Follow-up children were divided into deciles on the basis of their first year pretest standardized reading (Metropolitan) scores. Their subsequent mean scores on the appropriate Metropolitan subtest and on the grand total of The Electric Battery were calculated. Tables I-72 and I-73 provide these data for the EE and CC groups, I-72 being for the first-second grade study (both sites) and I-73 for the second-third grade study (both sites). The EE and CC groups were chosen for this analysis because they represent the clearest comparison groups over the two years.

A problem in interpreting these tables is that the data in any one cell are based on rather small N's. Because these provide rather weak statistical power, and because of the quasi-experimental nature of this particular design, the probability figures presented in Tables I-72 and I-73 should be interpreted guardedly. In the first-second grade study in Fresno the major effects of viewing seem to be found in deciles 2 and 7 with weaker effects in deciles 3, 5, and 10. In Youngstown, the strongest effects seem to be with deciles 6-10 with only scattered effects in deciles 1-5. This would suggest that in the first-second grade study there was a slightly better effect of viewing in those children in the upper rather than the lower deciles. And, as we noted in the first year evaluation report, the lowest decile of the youngest study group (which includes those with the greatest reading handicaps) does not seem to benefit from viewing.

In the second-third grade study in Fresno, positive viewing effects can be seen across all deciles except deciles 1, 5, and 10. Again the lowest decile includes, of course, children with relatively serious reading problems. With the highest decile (decile 10), there are technical, psychometric problems associated with ceiling effect. In Youngstown, the effects of viewing are similarly scattered across the deciles with deciles 1 and 3 showing no significant viewing effects and decile 8 favoring the CC group.

In general, the decile analysis of the first-second and second-third grade follow-up studies indicates some beneficial effects of viewing across a broad band of reading achievement levels with only the lowest decile not sharing somewhat in these benefits.

9. Did The Electric Company affect the reading scores the children received in the regular standardized testing program operating in their schools?

In the second year of the study the cooperating school systems of Fresno and Youngstown provided us with the reading scores obtained from their regular testing programs on virtually all the children in our follow-up study. Fresno administered the Cooperative Primary Tests and Youngstown the Scott-Foresman Basic Reading Test. (This latter test was administered after students had finished a particular point in their reading program. Testing in Fresno was administered in May, relatively late in the school year.)

The means and standard deviations expressed as percentile rankings of the EE and CC groups are presented in Table I-74. In the first-second grade study the regularly-administered standardized reading scores favored the CC group in Fresno and the EE group in Youngstown. In the second-third grade study the EE group was favored in both sites.

In general, viewing seemed to have a beneficial effect on the scores obtained in the schools' testing programs in Youngstown; but in Fresno the results were not as clear. Because the children were in the early primary grades, they had no "track record" against which to compare the obtained results. Thus, overall, although three out of four of the results favored the EE over the CC groups, it would be premature to assume that viewing The Electric Company had a clear-cut benefit on children's scores on reading in regularly administered standardized testing programs in the schools. However, the evidence points to this as a possibility.

B. Analyses of the Teacher Questionnaire and Classroom Observation Data

The second section of Chapter IV presents descriptive analyses of the teacher questionnaire and classroom observation data. These analyses were undertaken in order to answer the following questions.

10. Did the teachers of the E and C (viewing and non-viewing) classes differ in the second year in their responses to the teacher questionnaires?
11. To what extent did the pretest and posttest teacher responses intercorrelate? Specifically, did the pretest-posttest correlations indicate, indirectly, program effects on teacher attitudes and behaviors?
12. What were the prevailing conditions in the viewing classrooms when The Electric Company was being received?

Again, we caution that the evaluation design was not primarily focussed on obtaining answers about teachers and their effects on the impact of The Electric Company. If one wanted to discern causal links among teachers, teaching, and impact, a different kind of evaluation design would have to be fashioned. In the study reported here teachers were not assigned to classes by the evaluator and their teaching was in no way manipulated (except that teachers of experimental classes were asked to have their students view the show each day). Thus, the analyses to be reported in this section may be thought of as being on data from a basically naturalistic setting. We cannot assume that the results will indicate causal relationships; and we should view this section as providing further supplementary information having heuristic value.

10. Did the teachers of the E and C (viewing and non-viewing) classes differ in the second year in their responses to the teacher questionnaires?

The teacher questionnaire scale scores for second grade teachers in the second year of the first-second grade study are presented in Tables I-75 (Fresno) and I-76 (Youngstown). The same tables are presented for the third grade teachers in the second year of the second-third grade study in Tables I-77 (Fresno) and I-78 (Youngstown). In each of the four tables the experimental and control teachers' mean scale scores are presented separately.

In such relevant areas as percentage of time spent in reading activities and the percentage of time spent at particular reading activities, there seem virtually no noteworthy differences between experimental and control teachers at pretest. Differences were relatively small at posttest but slightly higher percentages of time in reading were indicated by viewing teachers. In addition, the validity of the questionnaire responses was substantiated by the fact that experimental teachers claimed to watch two to three hours a week more of educational television in school. In general, experimental teachers in comparison with control teachers did not claim to spend more time at teaching the various areas emphasized on The Electric Company.

In the attitudinal areas there was a similar homogeneity of response between the two groups of teachers with respect to the attitudinal items. Experimental and control teachers held similar attitudes toward educational television and the use of phonics and linguistics in reading instruction.

The teachers' backgrounds were quite similar for the two groups as were their class sizes, and the number of problem readers per class.

Experimental teachers at posttest reported, on the average, positive attitudes concerning the usefulness of the show in helping teach reading skills and reach children with reading difficulties. Both second and third grade teachers found the show appropriate for their classes.

The final item, again only for experimental teachers at posttest, asked where the time came from to watch The Electric Company. In general, only about ten percent of the time was taken from "regular reading" time--but about 20 percent came from "language arts" and about 20 to 40 percent came from "other academic subjects." As in the first year evaluation, it seems that teachers have used a combination of additional reading time and time from regular language and reading programs to accommodate their classes' viewing The Electric Company. Reading is a subject that cuts across almost all other academic subjects and teachers often find it difficult to specify what percentage of time is actually spent in reading instruction and reading activities. Thus, the fact that viewing The Electric Company took time from a range of subject areas is not surprising.

Tables I-79 and I-80 present some additional teacher questionnaire data obtained during the course of the second year study. This suggests that during the months The Electric Company was actually being telecast (as opposed to the pretest period) slightly more time--especially in Fresno--was spent at reading in the experimental classes. These tables also indicate that classes were intact as they viewed and that viewing was rarely preempted by other activities.

11. To what extent did the pretest and posttest teacher responses intercorrelate?

Table I-81 presents the intercorrelations of the second grade pretest teacher questionnaire data for the first-second grade study (each site separately), and Table I-82 similarly presents the intercorrelations of the third grade teacher questionnaire data for the second-third grade study.[1] Tables I-83 and I-84 correspond to Tables I-81 and I-82 but present the intercorrelations for the posttest data. These intercorrelations are not of direct relevance for this study, but they are presented in order to achieve a comprehensive reporting. They provide material for those interested in studying, for example, the factorial structure of the questionnaire.

Of greater relevance to this report are Tables I-85 to I-88. These present separately by each site and by each grade the intercorrelations of the pretest with the posttest teacher questionnaire items and scale scores—a sort of test-retest reliability index. Certain items (e.g., percent time spent on teaching physical education) should not be particularly affected by the fact that the teachers viewed The Electric Company in the period between pretest and posttest. The pretest-posttest correlations of other items (e.g., time spent teaching blending) are more likely to have been affected.

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[1] For these and succeeding tables, the teachers whose data are presented are the second year experimental (viewing) teachers. At pretest in the second year, they responded as the control teachers did. At posttest, there were some differences but basically we were interested, as we shall explain, in the pretest-posttest differences in correlations; and these could not be satisfactorily studied if control teachers' data were included.

An examination of Tables I-85 to I-88 indicates, however, that no clear pattern is discernible. The percentage of significant correlations barely rises above five percent of the obtained correlations. While many of the significant correlations were readily interpretable, it would be unwise to put much credence on this evidence.

12. What were the prevailing conditions in the viewing classrooms when The Electric Company was being received?

As was pointed out in Chapter II, each of the experimental classes was observed on about four occasions in the second year of the follow-up study. The observations took place in the 15 minutes before, during, and the 15 minutes immediately after The Electric Company was telecast. The data were collected by one observer only in Fresno and by one (but a different) observer in Youngstown. Site differences could, therefore, be, at least in part, a function of lack of inter-observer reliability, an index of which could not be obtained. Table I-89 presents descriptive data from the second grade classes separately for both sites and Table I-90 presents similar data for the third grade classes.

In general, it would seem that teachers in Youngstown made frequent reference to the show. In both sites the attention and attendance levels were high during viewing. Overt student participation seemed to be slightly more pronounced in Youngstown. In both sites the television reception was usually adequate to excellent.

These data take on greater utility in the next section where their intercorrelations with student performance are presented.

C. Intercorrelations of Teacher Questionnaire Data with Student Performance

Teacher questionnaire data were correlated with student performance data to provide answers to the question:

13. What factors in the classroom related to student gain in the second year?

In order to answer this question, the pretest and posttest teacher questionnaire and observation record data of classrooms with CE children were correlated with the second year gains of those CE children. To ensure reduced contamination of gains with second year pretest scores only CE children were considered and their pretest scores were partialled out of the correlations. The N's for the four sets of data were:

	Fresno	Youngstown
(first-second grade) 2nd grade	11	11
(second-third grade) 3rd grade	10	22

Table I-91 provides the obtained partial correlations separately by site and by grade. There was no particular consistency between the Fresno and Youngstown results or between the two grades in each site. Gains were positively related to teachers' positive attitudes (at pretest) toward children's being able to learn to read, Sesame Street viewing, personal job satisfaction, and (at posttest) toward the teaching of morphemes, teachers' judgments that the show was appropriate for the class, and, again, positive attitude to children's being able to learn to read.

In third grade, the results in the two sites again did not show much agreement. Gains were positively related (at pretest) to teachers' positive attitudes toward educational TV, phonics, and The Electric Company; and (at posttest) with positive attitudes toward phonics and linguistics.

A number of statistically significant negative correlations were also obtained in the two sites in the two grades. Again, there was little consistency; and the results in the case of the negative correlations are not readily interpretable.

For the observation data only one correlation out of twenty proved to be significant at the .05 level. This we interpret as probably a chance occurrence.

CHAPTER V: SUMMARY AND CONCLUSIONS

A. Summary of Project Activities

As part of the follow-up evaluation of The Electric Company, children who had been first graders during the first year evaluation were identified in their second grade classrooms. These children are referred to as first-second grade children. Similarly, children who had been second graders during the first year evaluation were identified in their third grade classes and are referred to as second-third grade children. Within each school, classes containing these children were then randomly assigned either to an experimental (viewing) treatment condition or a control (non-viewing) condition.

Because follow-up classes did not remain intact from the first year study, random assignment of classes to treatment conditions in the second year resulted in four different groups of follow-up children: those who viewed both years of the show (EE); those who viewed only the first year show (EC); those who viewed only the second year show (CE); and those who never viewed the show (CC). In addition, children who had not been part of the first year study but were now in classes with follow-up children were also part of the second year study. Children in the first year study who were no longer in one of the schools studied were not followed. In all, 604 children in 56 classes in Fresno and 1169 children in 70 classes in Youngstown were studied in the second year evaluation.

The Electric Battery, an ETS-formulated test, was the measuring instrument used to assess reading skills addressed on the show. It was identical to the instrument used in the first year study except for elimination of matching subtest. Classes were tested in October before the series began and in May after the series ended. Teacher questionnaires to assess teachers' backgrounds and attitudes, methods of teaching, and classroom characteristics were administered three times during the school year. Observers visited each experimental class several times during the year recording teacher behavior and classroom atmosphere while the show was being televised.

B. Summary of the Analyses and Conclusions

The follow-up evaluation described in this report was designed to assess the effects of the first (1971-1972) and second (1972-1973) years of The Electric Company on classes of children in Fresno County, California and Youngstown, Ohio. Six major questions and seven supplementary questions were asked and analyses conducted to address these questions.

The major analyses carried out to measure the effects of viewing The Electric Company were weighted analyses of covariance calculated separately for the first-second and second-third grade groups in each site. The total Electric Battery scores as recorded at posttest, Year 1, pretest, Year 2, and posttest, Year 2 were used as the primary dependent variables although subscores of the Electric Battery and the Metropolitan Achievement Test were also used as dependent variables. Covariance adjustment was the method selected because it yielded more precise estimates than posttest scores alone or gain scores although all three are unbiased due to the randomization. The second-third grade data were also reanalyzed to compute the effects of the show for "target" children (those scoring below the midpoint on national reading achievement norms) and "non-target" children (higher scoring children).

In this section, we present brief answers to these thirteen questions based on the results of the study.

1. Did the immediate positive impact of the first year of The Electric Company, noted in the first year study, hold up for the subsample that was to be followed for a second year?
2. Did the positive impact of the first year of The Electric Company continue through the school summer vacation period into the first month of the following year (pretest, Year 2)?
3. Did the positive impact of the first year of The Electric Company continue through the school summer vacation period and on through the following year of school (posttest, Year 2)?

In examining the data from the first year of the show, the short-term positive effects reported for children in the first year evaluation were substantiated. Significant positive effects as measured by the Electric Battery were found at posttest, Year 1 for first-second and second-third grade classes in both sites. These effects lessened over time, but seemed quite clear and strong after the first year's summer recess (pretest, Year 2), and were still visible at posttest, Year 2, the end of the second year. Evidence was also found to support the view that The Electric Company was more beneficial for the "target" group than the "non-target" group.

4. What was the impact of viewing the second year of The Electric Company when this was the first exposure to the show?

To assess the impact of viewing the second year of The Electric Company, those children who had viewed only the second year show (CE) were compared with those who did not view the show at all (CC). The results of our analyses indicated that while the effects were positive, they were not as significant nor as large as the effects of the first year show.

A content analysis was conducted to compare the specific content of the first and second year shows. The results showed that although there were some differences in the interpretation of goal areas, the show remained basically the same over the two year period. In fact, much of the same material from the first year show was repeated in the second year. However, there did appear to be substantially more time devoted to Entertainment, a non-skill oriented goal that provided motivational and affective cues for viewers.

5. What was the impact of viewing the first two years of The Electric Company in comparison to having viewed the first year only?

The children who viewed for two years (EE) were also compared with those who only viewed the first year (EC) in order to estimate the effect of an additional year of viewing. In general, no noticeable benefit was gained in either site in either the first-second or second-third grades. Apparently, the skills taught by the show seem to be mastered by most children who viewed one year of the show.

6. What was the impact of viewing the second year of The Electric Company for "new" children with varying degrees of exposure to the first year of the show?

In addition to examining the effects of The Electric Company on children in the first year evaluation, children who were new to the study were also studied. Because these children were not part of the first year evaluation, we had not controlled their viewing or non-viewing in the first year. Some children had viewed a lot; some not at all. The results for this group are consistent with the results reported for the follow-up children--a small positive benefit from viewing the second year show.

Supplementary analyses were also carried out to provide information from the teacher questionnaires and classroom observation records about how teacher attitudes and behaviors related to the effects of the show on the classes.

7. Did The Electric Company lower the percentage of children designated "target"?

In order to determine if The Electric Company was reducing the number of "target" children as defined by CTW, the numbers of follow-up children in both sites designated "target" were compared at the four test times.

Although all first grade children had been considered target in the first year study, for comparative purposes the national median (50th percentile) cut-off point was assigned. In both sites, there was a noticeable decrease in the number of target children in viewing groups especially for the EE and EC groups.[1]

In the second-third grade study, the results seem slightly stronger, again showing fewer target children in the EE and EC groups.

8. Did The Electric Company have differential effects on children depending on their prior-viewing level of achievement?

Follow-up children in the EE and CC groups were divided into ten groups (deciles) based on their scores at pretest, Year 1 on a reading subtest of the Metropolitan Achievement Test. Means were then calculated for their scores on the Electric Battery and a reading subtest of Metropolitan Achievement Test at the four test times. Comparisons were then made to determine which deciles gained from viewing the show.

In the first-second year study, in both sites, the upper deciles showed greater positive effects of viewing, and the lowest decile (containing the poorest readers) did not seem to benefit.

In the second-third grade study in both sites, the positive effects of viewing are more evenly distributed, but again no effect is seen in the lowest decile.

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[1] The comparisons in this analysis are with the CE and CC groups.

9. Did The Electric Company affect the reading scores the children received in the regular standardized testing program operating in their schools?

Scores for follow-up children in the EE and CC groups on the Cooperative Primary Test (Fresno) and the Scott-Foresman Basic Reading Test (Youngstown) were obtained from the children's schools. Means and standard deviations were then computed. In Youngstown, the EE children in the first-second and second-third grade studies scored higher on their school-administered reading achievement tests than their CC counterparts. In Fresno, only the second-third grade EE group scored higher than the CC group. The evidence suggests, though weakly, that improved achievement on standardized reading tests is a possible outcome of viewing, since the EE children showed higher scores in three out of the four comparisons.

10. Did the teachers of the E and C (viewing and non-viewing) classes differ in the second year in their responses to the teacher questionnaires?

There were no important differences between the experimental and control teachers' responses to items on the pretest, interim or posttest teacher questionnaires. The two groups of teachers were similar on background variables, (e.g., amount of teaching experience), attitudes held (toward educational television, phonics), and classroom variables (e.g., number of children in class).

11. To what extent did the pretest and posttest teacher responses intercorrelate?

All second year pretest and posttest responses to teacher questionnaires were intercorrelated for second year experimental teachers. The number of significant correlations did not rise above the chance level. This precluded the interpretation of these data.

12. What were the prevailing conditions in the viewing classrooms when The Electric Company was being received?

Several observations of each experimental class were made throughout the year. In general, the television reception was clear. The data from the observation records showed that teachers referred to the show both before and after broadcast and that children were attentive to the show and actively participated in the show's activities.

13. What factors in the classroom related to student gains in the second year?

Pretest and posttest teacher questionnaire items and classroom observation records were intercorrelated with student gains (adjusted for pretest scores).[1] The results indicated that there was no consistency on which items correlated highly with student gains. Some items that showed correlations above the chance level included teachers' personal job satisfaction, their attitudes toward phonics, educational television, Sesame Street, The Electric Company, and their children's ability to learn to read.

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[1] Only the responses of teachers of experimental classes were used along with the scores of their students who were in control classes in the first year.

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In general, this follow-up study of The Electric Company confirmed the generally favorable results obtained in the evaluation of the first year of the show. The positive impact noted in the first year evaluation was found to be long-term rather than short-term. The second year of the show was also found to have positive impact though the size seemed somewhat less. Viewing both years of the show seemed not to be more useful than viewing just the first year's show--one year's viewing seeming to provide the major benefit. No particular teacher attitudes or behaviors were consistently found to have a relationship with viewers' gains though some evidence was found that indicated possibly worthwhile future investigation.

APPENDIX A

A SUMMARY OF THE MAJOR FINDINGS FROM "READING WITH TELEVISION: AN EVALUATION OF THE ELECTRIC COMPANY"

A SUMMARY OF THE MAJOR FINDINGS
FROM
"READING WITH TELEVISION:
AN EVALUATION
OF THE ELECTRIC COMPANY"

A report by:

SAMUEL BALL

GERRY ANN BOGATZ

EDUCATIONAL TESTING SERVICE

Princeton, New Jersey

March, 1973

The Electric Company, second of the educational ventures of Children's Television Workshop, was telecast daily for one-half hour by more than 220 stations, nearly all non-commercial, in the United States during an inaugural season beginning October 25, 1971, and ending April 21, 1972. The program's first year was funded by the United States Office of Education, The Ford Foundation, Carnegie Corporation, The Corporation for Public Broadcasting, and the Mobil Oil Corporation.

Summary prepared by James J. Morisseau

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BACKGROUND

The Electric Company represents the first large-scale experiment in the use of television in teaching reading skills to young children. As such, there was a need to evaluate the program to determine whether the 26-week series was effective in meeting the goals set for it by Children's Television Workshop (CTW) and its educational advisors.

To meet the need, CTW circulated a request for proposals for the evaluation of the first year of The Electric Company, its content, and its approach. The contract was awarded to Educational Testing Service (ETS) -- a non-profit educational measurement and research organization in Princeton, New Jersey. ETS has conducted evaluations of the first two years of the CTW-produced Sesame Street.

Among the questions ETS explored were:

--What are the program's effects on first through fourth grade classes who view The Electric Company in school?

--What are the effects of viewing The Electric Company in school on its main target audience -- that segment of second, third, and fourth graders who are experiencing reading difficulties?

--What are the program's effects on similar groups of children who view at home rather than in school?

--Does frequency of viewing affect the program's impact on at-home viewers?

--What are the effects of the program in each of the 19 main curriculum areas for the show's first season?

--What are the program's effects on viewers of Spanish background, on blacks and on whites, and on boys and on girls?

--Is the program more effective when seen in color rather than in black and white?

--Does the program affect the attitudes of children toward reading or school?

--Does the program affect the attitudes of teachers or parents toward the children and their reading performance? What are the attitudes of teachers toward the program?

ETS has published its findings in a report entitled READING WITH TELEVISION: AN EVALUATION OF THE ELECTRIC COMPANY.* The following is a summary of some of the highlights and major conclusions of the full report.

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* Copies of the full text of the final two-volume report are available from the Educational Resources Information Center (ERIC), Document Reproduction Service. TM 002433 and 34

MAJOR POSITIVE FINDINGS

Television can be an effective classroom tool in helping first through fourth graders learn to read.

The ETS study clearly indicates that as a result of watching The Electric Company in school during the 1971-72 inaugural broadcast year, viewing classes made significantly greater gains that non-viewing classes in the reading skills the program was designed to teach. The program had a clear and significant impact on its primary target audience -- second grade children who were in the bottom half of their class as indicated by standardized reading test scores -- indicating the program was an effective instructional supplement for children who were beginning to experience reading difficulty.

- The program, according to the ETS findings, also was successful on first-grade classes that viewed in school. The first graders were not among the primary target audience for whom the program originally was designed.

- The program had a significant impact on third and fourth grade classes that viewed in school, although the effect was somewhat less than in the lower grades.

- The program was successful in producing gains among first and second grade classes across almost all of the 19 major curriculum areas built into the program and tested in the ETS study. Some positive effects on a standardized reading test were also found.

- The program had a similar effect on all groups who viewed in school -- Spanish background, blacks, whites, boys, and girls.

- The program won a generally favorable reaction from teachers who found it useful in teaching and reviewing certain reading skills.

THE PROGRAM

The Electric Company is built around a specific set of curriculum goals developed by CTW's educational advisors and its research and production personnel. The goals are premised on the need to give children some tools required for "decoding," the process of extracting meaning from written messages.

Specific goals for the first season included 19 curriculum areas grouped under such categories as consonants, vowels, and consonant "blends" (for example, "bl," "dr," "st"); letter groups or "chunks" (like "ai," "ch," "ar"); scanning for structure (for example, recognizing that a final "e" changes the sound of a word); and reading for meaning.

The 130 half-hour programs were telecast daily from the end of October to the end of April. The curriculum provides a "cafeteria" of instructional approaches to teaching basic reading skills. This is made possible through a segmented and varied format of short, varied components, including live performances, some film, and cartoon animation.

The Electric Company in its first season was aimed at second, third and fourth graders, with a main target audience of second graders who score in the lower half of their grade on standard reading achievement tests, and on third and fourth grade pupils scoring in the lowest quarter of their grades on the standardized tests.

THE SAMPLES

The evaluation of the effects of viewing The Electric Company in school involved 100 public school classrooms in each of two sites--Fresno, California, and Youngstown, Ohio. Half of the classrooms studied in each site were randomly assigned as viewing classes and the other half as non-viewing.

The sites were selected on two criteria. The first was control of viewing conditions. In both locations, children from designated non-viewing classes were not able to view the program. In Fresno, the program was telecast to viewing classes only over the county school system's closed circuit network. In Youngstown, there was no educational television station and the program was telecast to viewing classes only over a commerical outlet. In neither site was the show telecast after school hours.

The second criterion was demographic variety. Fresno County, a largely rural area, offered the opportunity to test the program's impact on rural children and, at the same time, on children of Spanish background (comprising about 50 percent of the Fresno sample). Youngstown provided an opportunity to examine effects on urban youngsters (50 percent of the sample was black).

An attempt was made to evaluate the effects of viewing The Electric Company at home in Richmond, Va., and Washington, D.C. The 200 predominantly black classes sampled were designated as either encouraged or not-encouraged to view the program at home during after-school hours. These two sites were selected because it was thought that control groups could be maintained in these UHF (ultra high frequency) areas.

In all, the total sample included 8,363 first through fourth grade children in some 400 classes. It should be noted that the children viewed or were encouraged to view in class units, so that most of the results of the tests were based on class performance and not on the performance of individual pupils.

THE TESTS

The ETS study of The Electric Company involved a battery of tests administered to classes both prior to and following the broadcast season. The key element was a 123-question test, "The Electric Battery," designed to assess children's performance on the program's curriculum objectives rather than their general reading performance. "The Electric Battery" included 19 subtests under the 4 major curriculum goal areas: blending letter sounds, chunking groups of letters, scanning for structure and reading for meaning. The questions in "The Electric Battery" sampled skills associated with each of the goal areas.

First grade children, having little previous formal reading instruction behind them, were given a shorter, 24-question version of the battery at pretest.

The battery also included assessments of children's attitudes toward reading and toward school and their preferences in subject matter. A random 20 percent of all children also received a 42-question, individually administered test which assessed their abilities to read aloud certain sounds, words, and word groups.

In addition, questionnaires were employed with both teachers and parents to evaluate the program's impact on such areas as parent, teacher, and pupil attitudes. All viewing and encouraged classes were observed during regular reading instruction in an effort to relate classroom reading instruction and reading preformance.

Finally, a section of the standardized Metropolitan Achievement Test was administered to each grade level before the broadcast season to identify target children and after the season to measure gains in general reading ability. In Richmond and Washington, measures of amount of viewing of The Electric Company were also part of the evaluation.

THE RESULTS

The evaluation of The Electric Company was essentially a matter of determining whether classes that viewed made greater gains in certain reading skills than classes that did not view. The Electric Company audience is made up of school-aged children, all of whom can be assumed to be gaining from their school experience in the same areas that make up the program's objectives. The evaluation is thus a determination of whether classes that watched made gains over and above those achieved through regular classroom instruction.

The In-School Viewing Study

The ETS study, as noted earlier, clearly indicated that The Electric Company was successful in achieveing its major goals, particularly with target readers in second grade and with first-grade classes that viewed in school. The series benefited children at different levels of reading achievement and in first and second grades this benefit included improvement in almost all of the 19 main curriculum areas. The series also benefited third and fourth grade classes, but to a lesser extent than in the lower grades.

On the 123-question battery, the advantage from viewing was found to be significant in every grade. First grade viewing classes had an estimated 5.5 point advantage at posttest over non-viewing classes in Fresno; in Youngstown, the estimated advantage from viewing was 10.2 points. In second grade viewing classes, the estimated advantage was 5.8 points in Fresno and 2.2 points in Youngstown. In third grade, the estimated gain was 2.4 point in both sites and in fourth grade it was just over 1 point.

The smaller gains in the higher grades may have been the result of a "ceiling effect" -- that is, many of the children at pretest already had mastered many of the skills assessed in the battery. Therefore, these children had little to gain on this test battery: third and fourth grade classes at pretest averaged scores of 94 and 106, respectively, on the 123 questions. It may be that the test were too limited in difficulty and that a more challenging test instrument would have produced evidence of greater gains. Another possibility is that some poorer readers in the third and fourth grades, with a history of reading difficulty, already had developed negative attitudes toward reading and toward school and thus had difficulty benefiting from the program.

The study indicated that viewing classes in first and second grades made significant gains across almost the full spectrum of the program's curriculum goals. Examination of the scores on items designed to test achievement in the program's sub-goals (Page 12) indicates that the overall scores were the results of gains in almost all of the goal areas.

The two most striking examples were among second grade target viewers in Fresno, who scored significantly more than non-viewers in 17 of the 19 subtest areas, and among first grade viewers in Youngstown, who scored significantly more than their non-viewing counterparts in 18 of the areas. (Page 14).

Looked at another way, within the target second grade test group in Fresno, the viewers gained an additional 2.5 percent to 19.0 percent more than non-viewers. The average percentage advantage among viewers was 8.7 percent. (Page 9).

In addition, a significant gain was made on a standardized reading test by viewing classes in Youngstown first grade and in Fresno fourth grade.

Also important was a finding in the ETS study that gains due to viewing occurred whether time for viewing was normally taken from or added to regular reading instruction. Gains were about equal in classes where The Electric Company was viewed during time normally devoted to reading instruction and in classes viewing during the time normally devoted to instruction in other subject matters.

The effects of viewing the program in school appeared to be similar for all groups of children, regardless of ethnic background or sex. Similar gains were registered for girls and boys, blacks and whites, and children from Spanish-speaking and English-speaking backgrounds.

And a number of additional findings were noted.

Teachers in general and first-grade teachers in particular reported favorable attitudes toward the program.

At the first-grade level, parents of viewing children regarded their children as better readers than did parents of non-viewing children. (Similar reactions were not found at the higher grade levels and no other parental attitude changes were noted.) The attitudes of children toward school and reading did not seem to be affected by the program.

No difference in achievement was found between children who viewed the program in school in color and those who viewed it in black and white. The study did not measure motivational aspects of viewing in color vs. black and white.

The At-Home Viewing Study

The evaluation of the effects of viewing The Electric Company at home did not provide conclusive results. In both Washington and Richmond, children in classes that were not encouraged to view at home viewed on their own almost as much as children in encouraged classes. Since amount of viewing between the two groups was not very different, it is not surprising that gains were also quite similar.

Attempts to see if the amount that children viewed at home had any affect upon scores turned up no systematic differences among children of differing levels of viewing. One possible conclusion is that amount of viewing the show at home did not influence scores. An alternative possibility is that the measures used were not precise enough to accurately assess amount of viewing.

FOLLOW-UP STUDIES

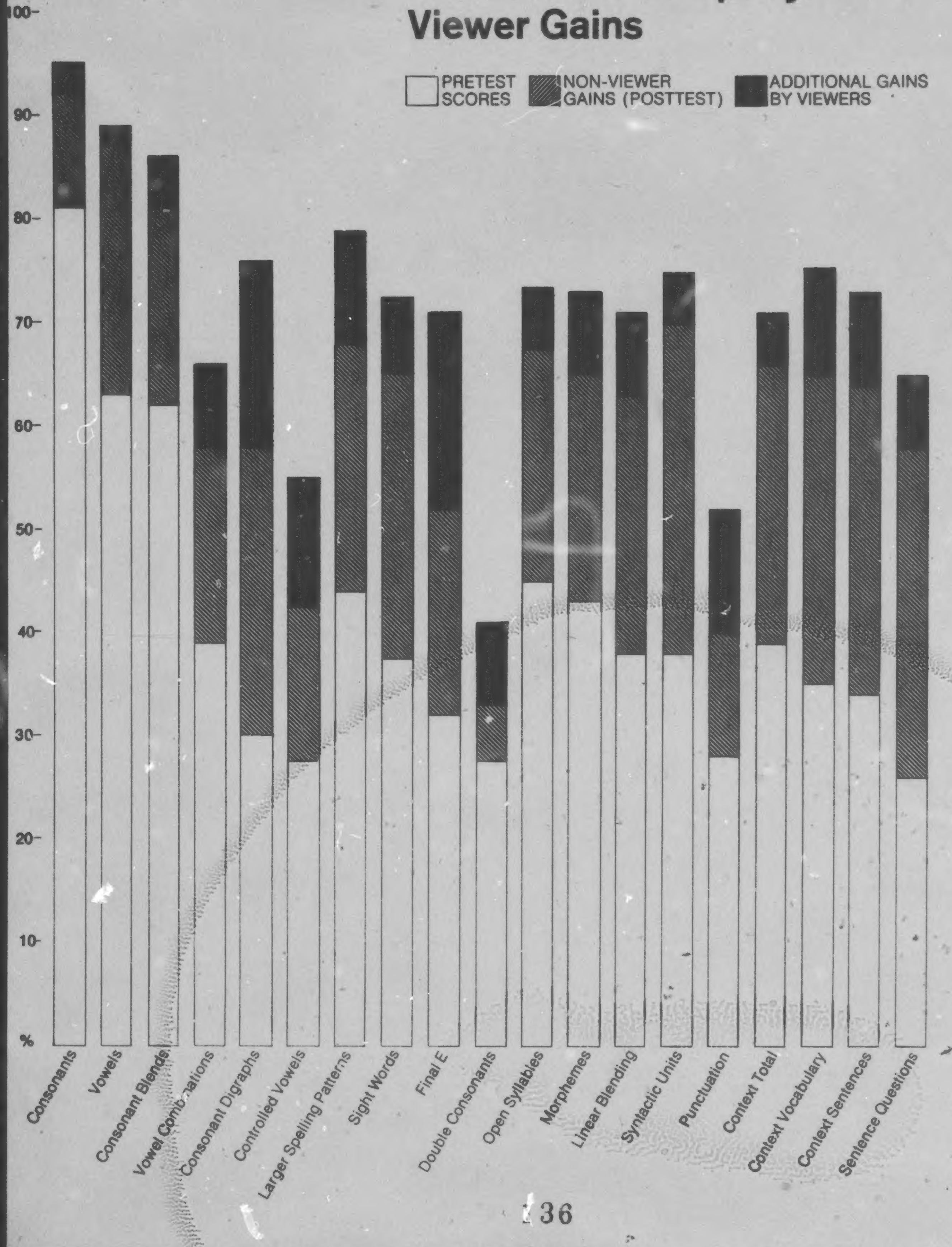
To evaluate an experimental educational effort adequately is a long-term project. The first year findings indicate that the in-school viewing of the program was successful in meeting its immediate goals. The final "report card" will not be in until follow-up studies can be made of the target audience to determine whether the program has a lasting impact on their reading ability.

As an example, it was not possible in a first year study to determine whether the program has the desired effect of preventing reading failure among first and second-grade pupils. Nor was it possible to explore such questions as whether the failure of older children can be reversed.

Accordingly, CTW has commissioned ETS to undertake a second-year study of The Electric Company, following second and third grade classes in Fresno and Youngstown that last year were first and second grade classes. Included will be children who were in non-viewing classes last year but who are in viewing classes this year -- and vice versa -- as well as children who were not included in the first-year study. The new study will make it possible to evaluate the impact of two years of viewing and one year of viewing and to further look at the program's influence on viewers attitudes toward school and reading.

According to findings by the Educational Testing Service, second grade target viewers in Fresno, California, scored significantly higher than non-viewers in 17 of the 19 subtest areas and slightly higher than non-viewers in the other 2 areas in the evaluation of the television series. Chart illustrates additional percentage gain made by the target viewers in the subtests, which correspond to the 19 curriculum goals of the first season. Across the range of subtests, viewers gained from 2.5 percent to 19 percent more than non-viewers on the questions passed after pretest, and the average advantage among viewers was 8.7 percent. The chart shows percentage of each subtest answered correctly at pretest, the percentage of gains made by non-viewers during the study, and the additional gains made by viewers. "Target" students are those who at pretest scored in the lower half of a nationally normed reading test. The Fresno viewers were among 8,363 grade school pupils who were tested by ETS before the series began and again at the end of the 130 daily, half-hour programs that made up the first broadcast season.

The Electric Company: Viewer Gains



Excerpts From 'The Electric Battery'

The Educational Testing Service's evaluation study of the new TV series "The Electric Company," produced these posttest averages from sets of viewers and non-viewers of the program.

	First Grade				Second Grade			
	Fresno		Youngstown		Fresno		Youngstown	
TEST	Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers
Consonant Digraphs								
ph	**48%**	28%	**60%**	17%	**83%**	46%	**95%**	61%
ch	62	**63**	**68**	55	**92**	82	**92**	87
th	**69**	63	**66**	52	**81**	67	**83**	82
wa**sh**	**60**	53	**69**	58	**90**	82	**92**	87
shake	**48**	34	**38**	24	**72**	48	[illegible]	57
chew	**46**	37	**57**	38	**77**	59	85	76
Larger Spelling Patterns								
tall	**64**	60	**77**	59	**86**	78	**89**	83
h**igh**	**60**	58	**58**	39	**85**	75	**85**	82
b**all**	75	**81**	**89**	83	**91**	83	**95**	90
talk	**57**	51	**69**	43	**86**	70	**88**	83
wing	**49**	40	**51**	39	**74**	60	**75**	68
Final E								
mat**e**	**43**	38	**47**	29	**75**	61	**82**	75
not**e**	**55**	51	**61**	43	**80**	71	**86**	81
con**e**	**48**	37	**50**	37	**74**	56	**72**	63
kit**e**	**75**	61	**71**	56	**91**	72	**90**	85
rob**e**	**34**	20	**33**	12	**50**	27	**50**	31
tir**e**	**55**	50	**53**	42	**80**	62	**76**	68
Morphemes								
est	**92**	91	**91**	89	**99**	96	99	99
ing	68	**75**	**84**	73	**94**	91	98	98
er	41	**47**	**55**	36	**78**	62	**78**	74
's (poss.)	29	**38**	**33**	24	**54**	39	**48**	35
ed	**45**	44	**59**	38	81	**90**	**84**	82
ing	70	**78**	**85**	78	**94**	90	97	97
n't	53	**59**	**70**	54	**83**	66	**87**	84
n't	44	44	**60**	37	**74**	58	**83**	77
's (is)	29	29	**27**	25	**30**	35	**29**	24
s (plural)	**56**	52	**70**	62	**82**	74	**99**	88

YOUNG VIEWERS OF 'THE ELECTRIC COMPANY' registered more mastery of certain key reading skills than their non-viewing counterparts in nearly all of the 123-item battery of tests which Educational Testing Service researchers dubbed "The Electric Battery." The tests were administered before and after the first season of programs to 8,363 children in several parts of the country. These figures represent percentages of children who correctly answered test questions and indicate which group of children, all of whom started the year at the same general achievement level, were farther along in mastering each skill by the end of the year. Both viewers and non-viewers continued to receive regular classroom reading instruction during the season. The over all survey indicates that The Electric Company was effective in teaching areas which are difficult for many beginning readers. Group with higher average is indicated in bold face.

TEST		First Grade				Second Grade			
		Fresno		Youngstown		Fresno		Youngstown	
		Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers
Linear Blending									
	He swings the bat.	**63%**	57%	**67%**	61%	**86%**	78%	**90%**	84%
	She is wearing a skirt.	**65**	51	**68**	46	**81**	68	**85**	77
	The car is white.	72	72	**78**	68	**91**	86	**96**	95
	He is cleaning the horse.	**41**	36	**56**	43	**67**	50	**72**	67
	The book is on the seat.	60	**63**	81	70	**90**	87	**95**	94
	The waiter drops a dish.	**35**	24	**36**	23	**60**	48	**67**	56
Choosing by Parts of Speech									
	noun	**68**	65	**79**	73	**85**	78	**91**	86
	preposition	**44**	37	**52**	33	**74**	54	**87**	73
	verb	49	**51**	**77**	59	**85**	79	**93**	88
	preposition	**43**	38	**64**	42	**79**	66	**83**	77
	adjective	51	**52**	**68**	54	**78**	74	**84**	76
	verb phrase	67	**69**	**76**	59	**95**	87	**97**	92
	adjective	58	**63**	**76**	63	**87**	77	**91**	87
Punctuation									
	cap & period	37	**42**	**45**	27	**76**	56	**68**	64
	quotes	**49**	36	**66**	43	**66**	53	**75**	53
	period, exclamation	**38**	28	**50**	34	**64**	37	**69**	48
	commas	**26**	22	**35**	25	**35**	29	**45**	32
	cap, question mark	26	**28**	**37**	29	**50**	43	**62**	54
Sight Words									
	basketball	53	**64**	**70**	54	**86**	78	**94**	93
	hippopotamus	**50**	37	**57**	35	**84**	67	**86**	73
	refrigcrator	**47**	44	**57**	39	**68**	59	**75**	68
	helicopter	58	**60**	**67**	49	**82**	77	**85**	79
Sight Words in Sentences									
	tricycle	**62**	61	**70**	51	**88**	79	**94**	90
	refrigerator	53	**55**	**63**	50	**84**	69	**84**	83
	hippopotamus	**56**	53	**58**	42	**82**	69	**87**	77
	helicopter	**59**	55	**63**	47	**85**	73	**92**	84
	basketball	69	**70**	**84**	74	**94**	89	**98**	96
Answering Questions About Sentences									
	bus	**62**	52	**69**	54	**80**	75	**88**	80
	animal	**42**	39	**59**	46	**79**	67	**86**	78
	large	**31**	27	**43**	28	**62**	56	**77**	66
	two	49	**52**	**59**	36	**81**	68	**87**	80
	a ball	**50**	45	**58**	43	**76**	67	**80**	75
	his father	39	**47**	**59**	38	**79**	65	**90**	83
	a fish	**39**	36	**44**	32	**72**	60	**80**	69
	a glass	**38**	31	**47**	29	**66**	55	**76**	64

How Electric Company Viewers Fared: Pattern of Achievement

Chart, based on findings by Educational Testing Service, details areas where viewing classes scored significantly higher than non-viewing classes in Fresno, Calif., and Youngstown, Ohio. Included in the second grade study were "target" students who saw the show regularly and scored in the lower half according to national reading norms, and "non-target" students reading at or above grade level. Third and fourth grade "target" students were those scoring in the lowest quarter, again using the national norms.

A definite pattern favoring viewers emerges in the 123-question test covering the 19 curriculum areas included in the experimental series' first season. Greatest gains were made by second graders who were rated as poor readers, and by first grade classes. All four grades showed some progress as a result of viewing the show. Where differences are not considered significant, the grid is left blank meaning the probability of differences happening by chance alone is more than 10 percent. ETS tested 8,363 grade schoolers before the series began and again at the end of the 130 daily, half-hour programs that made up the first broadcast season.

		Grade One: (All Target) TOTAL	
TEST AND SUBTESTS	Number of Items	Fresno	Youngstown
Matching Words	8		■
Blending Total	28	■	■
Consonants	13	■	■
Vowels	6	■	■
Consonant Blends	9		■
Chunking Total	28	■	■
Vowel Combinations	9	■	■
Consonant Digraphs	6	■	■
Controlled Vowels	4		
Larger Spelling Patterns	5	■	■
Sight Words	4		■
Scanning Total	14	■	■
Final E	6	■	■
Double Consonants	4		■
Open Syllables	4		■
Reading for Meaning Total	45	■	■
Morphemes	10		■
Linear Blending	6	■	■
Syntactic Units	7		■
Punctuation	5	■	■
Context Total	9		■
Context Vocabulary	4	■	■
Context Sentences	4	■	■
Sentence Questions	8		■
Grand Total	123	■	■

Grade Two:				Grade Three:				Grade Four:			
TARGET		NON-TARGET		TARGET		NON-TARGET		TARGET		NON-TARGET	
Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown
■						■					■
■		■					■	■			
■							■				
		X							■	■	■
■	■				■						
■		■		■	■			■		■	■
■			■			■	■	■			■
■	■	■		■	■			■		■	
■	■										
■					■			■		■	■
■	■						■	■			■
■	■			■		■	■	■	■	■	■
■	■	■		■			■	■		■	■
■	■					■			■	■	■
■							■			■	
■	■		■	■		■	■				■
■	■						■		X		■
■	■			■					X		
■	■										
■	■							■	■	■	■
■	■			■							X
■	■					■	■				■
■	■		■		■	■					
■	■	■	■	■	■	■	■	■		■	■

In all boxes where squares appear, there is a 90 out of 100 or better chance that the differences favoring the show's viewers occurred as a result of their watching The Electric Company rather than by chance. Blank boxes on the grid indicate areas where differences are not considered significant. (The several X marks on the grid indicate where differences favored non-viewers.)

Impact of The Electric Company On Beginning Readers

How viewers and non-viewers of the experimental TV series fared is indicated by these results from individually administered tests conducted by Educational Testing Service at the close of the program's first season.

	First Grade				Second Grade			
	Fresno		Youngstown		Fresno		Youngstown	
	Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers	Viewers	Non-Viewers
Sounds in Words								
l	69%	69%	**77%**	65%	**98%**	95%	**99%**	94%
o	**65**	50	**57**	31	**90**	80	**92**	85
t	**70**	59	**76**	63	**94**	82	**96**	90
ay	53	**57**	**57**	37	**94**	81	**95**	85
r	69	69	**84**	56	**98**	82	**100**	93
a	59	**62**	**61**	43	**93**	74	**95**	81
ch	**51**	39	**70**	37	**83**	59	**90**	84
pl	**80**	79	**95**	83	100	100	98	**100**
y	63	**65**	**67**	49	**100**	93	**98**	93
st	**65**	54	**37**	21	**78**	68	**82**	69
lp	69	**76**	88	**91**	**96**	88	98	98
oi	11	**12**	**11**	4	**50**	46	**53**	37
Sounds in Nonsense Words								
l	**70**	65	**81**	52	**95**	86	**94**	92
i	**62**	59	**66**	39	**86**	64	**77**	74
oy	**53**	44	**70**	45	73	**75**	**83**	71
ing	**53**	41	**50**	18	**74**	71	**75**	57
sk	**69**	53	**40**	17	**85**	71	**71**	58
e	27	27	**22**	4	**41**	33	**42**	21
oi	**16**	14	**11**	4	**55**	49	**51**	39
th	**62**	51	**59**	39	**80**	64	**80**	69
ern	**33**	28	30	**39**	**53**	51	**58**	39
a	**32**	16	**24**	14	**62**	36	**41**	24
i	**33**	24	**29**	2	**64**	50	**59**	46
ight	**29**	16	**32**	13	**62**	46	**76**	59
sh	**62**	55	**47**	31	**95**	72	**81**	66
ar	**43**	36	**27**	13	**64**	44	**63**	44
nk	**50**	38	**33**	17	**70**	57	**66**	58
a	**36**	16	**43**	36	**52**	38	**60**	59
Reading Words in Sentences								
He	**64**	83	**89**	71	**98**	94	**98**	97
went	54	**61**	**84**	56	**96**	92	**96**	93
home	**82**	69	**90**	64	**98**	96	**100**	97
correct order	**62**	57	**93**	91	**86**	80	**100**	98
The	91	**93**	**95**	81	100	100	100	100
little	80	**93**	**95**	83	100	100	**99**	97
toy	**65**	57	**84**	67	91	**94**	**99**	94
is	**91**	88	**95**	84	99	**100**	**100**	98
mine	**35**	21	**40**	15	**69**	57	**78**	60
correct order	64	**65**	**97**	90	**83**	77	**100**	99
Scrambled Sentences								
walks town the she to	27	**37**	**40**	19	**71**	51	**80**	62
big I am	**70**	64	**91**	84	**96**	88	98	**99**
boy tall is the	**52**	45	**67**	27	**86**	64	**93**	78
sees red he house a	**27**	20	**36**	19	**70**	48	**72**	58

INDIVIDUALLY TESTED VIEWERS OF "The Electric Company" consistently outpaced their non-viewing classmates in tests of skill areas treated by the experimental series which is designed to help teach beginning readers. All students in the test groups in Fresno, Calif, and Youngstown, Ohio, continued with their regular classroom reading instruction, but some also watched the TV series while others did not. These tests, administered to a random 20 percent of grade schoolers in the study, provide an assessment of the child's ability to apply what he or she has learned because they require an overt reading response which virtually rules out guessing. The figures report the average percentage of children in each group who correctly answered test items at the end of the first broadcast season and are not test scores. In other words, these figures gauge which groups of children, all of whom started the year at the same general reading level, are farther along in mastering each skill. Group with higher percentage is indicated in bold face.

APPENDIX B

GOALS OF THE ELECTRIC COMPANY

DRAFT VI

THE ELECTRIC COMPANY

CURRICULUM GOALS 1972-1973

The most basic and difficult concept the child must grasp is that print stands for speech. The following principles, derived from this concept, should be emphasized in the course of teaching specific curriculum items:

(1) The left-to-right sequence of print corresponds to the temporal sequence of speech.

(2) Written symbols stand for speech sounds. They "track" the stream of speech. A word which takes longer to say (caterpillar vs. cat) is also a longer written word.

(3) The relationship between written symbols and speech sounds is sufficiently reliable to produce successful decoding most of the time.

(4) Reading is facilitated by learning a set of strategies for figuring out the symbol/sound relationship.

(5) The goal of decoding is to extract meaning from the written message.

Understanding of these principles is best achieved through emphasis on reading and reading-like _processes_, which help the child experience what actual reading is like. Learning to read involves mastery of several such _processes_, and of the _pieces_ of the code, at several levels, which are _incorporated in these processes_. The same basic processes can be utilized in combining units at several levels (letters into syllables, syllables into words, words into sentences). Thus these processes are modeled when teaching the pieces of the code.

A problem-solving approach to reading is stressed so that the child is aware of all the kinds of clues that are available to him to assist the decoding procedure. The child is made aware that the written code is logical, rather than arbitrary.

I. _Processes_

A. Blending

Blending is the process of combining successive units (usually at the same level) to produce meaningful speech.

a. A "simple" blending model: m-a-n → man

b. A chaining model in which only one element is added at a time, e.g.: m; m+a → ma; ma+n → man. This is the preferred model because it reduces the memory load for the child and requires only one operation at a time.

c. A word family model: m-an → man
f-an → fan

d. Other models which prove to be useful may be added.

In modeling blending, certain letters are not generally presented in isolation, since they cannot be pronounced singly without some distortion. The consonants p, b, t, d, hard c, hard g, soft g, j and the digraph ch are not often pronounced in isolation for this reason. They are normally accompanied by a vowel, e.g., pa+t → pat; rather than puh-a → pa, etc. All other consonants, consonant digraphs, vowels, (anything that can be "held" without distortion) may be presented in isolation.

2. Consonant blends:

Consonant blends may be thought of as another example of the same linear-blending principle, and are sometimes treated as such. Consonant blends are also to be treated as single units, or chunks, to be blended.

3. Blending syllables:

Combining syllables into compound words is another illustration of the blending strategy. This is sometimes facilitated by cuing single syllables with rebuses.

4. Blending words into sentences:

The process of rehearsing the separate units in a phrase or sentence until they combine to produce a "natural" spoken pattern from which meaning can be derived is modeled. This is facilitated through devices such as:

a. Rebuses

b. Music or sound effects to cue speech contours and assist memory

c. Use of rhythm, as in poems or clapping games

d. Use of memorized or nearly memorized material (as in "Love of Chair" or familiar rhymes)

B. Scanning

Scanning is the process of utilizing structures other than simple linear order (as is the case for blending) in processing print. It may be thought as of "overviewing" or developing a "set" for the task. It is treated in the following contexts:

1. Spelling Patterns:

   a. Final e signalling a "long" vowel

mate	(vs. mat)
Pete	(vs. pet)
bite	(vs. bit)
note	(vs. not)
cute	(vs. cut)

Final e is not always presented in contrasting pairs. The attempt is rather to get the child to recognize that "an e on the end" acts on the preceding vowel, and must be taken into account in decoding that vowel.

   b. Double consonant signalling a "short" vowel

Where pairs of familiar words exist (supper/super) this principle is taught through contrasts. Otherwise the double consonant is taught by itself, again stressing that something which follows (here the double consonant) must be taken into account in decoding the vowel.

2. Utilizing Context:

The meaning of other words, preceding or following, as well as the grammatical structure of a phrase or sentence, can serve as context clues to supplement or check the decoding procedure. The use of context clues is illustrated by devices such as the following:

   a. Scrambled sentences (using knowledge of grammatical structure).

   b. Cloze procedure (fill in the blank).

   c. Using the meaning of other words in the sentence to to determine a probable meaning for nonsense or unfamiliar words.

   d. Using the meaning of other words in the sentence to determine the correct pronunciation and meaning in cases where two sounds for the same spelling result in possible confusion, e.g., row/row,read/read.

3. Punctuation:

Punctuation is presented as affecting the intonation and meaning of the entire sentence, to be taken into account in reading the whole sentence.

a. A capital letter signals a new sentence unless it's a name.

b. A sentence can end with a period, question mark, or an exclamation point. This affects the way it is read aloud (intonation) and its meaning.

c. Quotation marks indicate that the writer (speaker) is exactly reporting what someone said. (In dealing with an isolated sentence, the convention is followed that the person being quoted is identified; e.g., he said, she said, etc.)

II. Units or "Chunks" to be Utilized in Illustrating These Processes

a. Consonants:

b	(as in bag)
c	(as in cat and as in city)
d	(as in dog)
f	(as in fig)
g	(as in got and as in gem)
h	(as in hot)
j	(as in jet)
k	(as in kiss)
l	(as in lot)
m	(as in map)
n	(as in nap)
p	(as in pot)
qu	(as in quit)
r	(as in rot)
s	(as in sit)
t	(as in top)
v	(as in vat)
w	(as in won)
x	(as in box)
y	(as in yell)
z	(as in zoo)

b. Consonant Blends:

bl-, br-, cl-, cr-, dr-, fl-, fr-, -ft, gl-, gr-, -ld, -lt, -mp, -nd, -nk, -nt, pl-, pr-, sk-, -sk, sm-, sn-, sp-, -sp, st-, -st, sw-, tr-.

c. Vowels:

a	(as in rat)
e	(as in met)
i	(as in bit)
o	(as in hot)
u	(as in cut)
y	(as in dry and as in happy)

d. Vowel Combinations:

ai	(as in bait)
ay	(as in day)
ea	(as in neat)
ee	(as in see)
ie	(as in die and as in thief)
oa	(as in boat)
oi	(as in boil)
* oo	(as in food and good)
ou	(as in found)
ow	(as in know and as in cow)
oy	(as in toy)
ue	(as in blue)

* No distinction is made between the two sounds. It is likely that the sounds are similar enough for the child to generalize from one to the other.

e. Consonant Digraphs:

ch	(as in chop)
ph	(as in phone)
sh	(as in ship)
* th	(as in think and as in this)
wh	(as in what)

f. Controlled Vowels:

ar	(as in car)
er	(as in fern)
ir	(as in bird)
ur	(as in burn)
or	(is taught as sight word)

g. Larger Spelling Patterns:

-all	(as in tall)
-alk	(as in talk)
-igh(t)	(as in high and as in night)
-ing	(as in sing)
-tion	(as in action)

h. Sight Words: *

to
the
of
if
for
was
you
who
what
walk
stop
or

* Although we expect that most of the above words will be covered, the choice of sight words is left up to the producers, following the general principle that words chosen are (a) of high frequency in reading (THE, OF), (b) of high frequency in the environment (STOP, WALK, SCHOOL), (c) or are interesting words (SCRAM). Sight words are taught non-analytically as whole words. Words useful as syllables may also be added to this list, e.g., CAN, SAW.

i. Morphemes:

-ed	
-er, -est	(comparative and superlative adjectives)
-ing	
-ly	(adverbial)
-n't	(negative contraction)
-s	(plural)
-s	(3rd person singular)
-'s	(contraction)
-'s	(possessive)
un-	

APPENDIX C

DESCRIPTION OF THE ELECTRIC BATTERY

DESCRIPTION OF THE ELECTRIC BATTERY AND SAMPLE ITEMS

The items in The Electric Battery were ordered according to item type rather than item content. Subtests often contained items of more than one item type. The descriptions of the subtests treat each subtest and describe the item types within it. In the copy of the Battery that follows the descriptions, each item is identified by its subtest and each group of item types is labelled.

Matching (not given in the second year study)

8 items and 1 example -- Child marks the group of letters that matches stimulus.

The items in the next three subtests are of 5 types:

1. Initial sounds: The child marks a letter or letters whose sound begins a word that is presented pictorially and orally.
2. Rhyme: The child marks the printed word that ends (rhymes) with a word presented pictorially and orally.
3. Rhyme of different spellings: The child marks the printed word that rhymes with a stimulus printed word.
4. Ending sounds: The child marks the word presented pictorially and orally that ends with the sound of a stimulus printed letter or letters.
5. Matching pictures to words: The child marks the word presented pictorially and orally that represents a printed stimulus word.

Blending Total -- 28 items

1. Consonants -- 13 items
   Initial sounds -- 9
   Ending sounds -- 1
   Matching pictures to words -- 3
2. Vowels -- 6 items
   Initial sounds -- 1
   Matching pictures to words -- 5
3. Consonant blends -- 9 items
   Initial sounds -- 3
   Ending sounds -- 4
   Matching pictures to words -- 2

Chunks Total -- 28 items

1. Vowel Combinations -- 9 items
    - Rhyme -- 3
    - Rhyme of different spellings -- 3
    - Matching pictures to words -- 3

2. Consonant digraphs -- 6 items
    - Initial sounds -- 3
    - Matching pictures to words -- 3

3. Controlled vowels -- 4 items
    - Rhyme -- 2
    - Rhyme of different spellings -- 1
    - Matching pictures to words -- 1

4. Larger spelling patterns -- 5 items
    - Rhyme -- 2
    - Matching pictures to words -- 3

5. Sight words -- 4 items
    - Matching pictures to words -- 4

Scanning Structure Total -- 14 items

1. Final e -- 6 items
    - Rhyme -- 4
    - Matching pictures to words -- 2

2. Double consonants -- 4 items
    - Rhyme -- 4

3. Open syllables -- 4 items
    - Rhyme -- 2
    - Rhyme of different spellings -- 2

Reading for Meaning Total -- 45 items

1. Morphemes -- 10 items and 1 example
   The child marks the picture that represents a written phrase or sentence that contains a standard English morpheme.

2. Sentences -- 6 items and 1 example
   The child marks the picture that represents a written sentence.

3. Syntax -- 7 items and 1 example
   The child marks the word or words that correctly complete a printed sentence.

4. Punctuation -- 5 items and 1 example
   The child marks the sentence (presented orally and written) that is punctuated correctly.

5. Context -- 9 items
   The child marks the picture that represents a printed sentence. A sentence contains one complex word (5 items) or one ambiguous word (4 items) that the context clarifies.

   a. Context (vocabulary) -- 4 items
      Four of the five complex words used in the context sentences above are here tested by themselves. The child marks the picture that represents the printed word.

   b. Context (sentences) -- 4 items
      The four context sentences that contain the context vocabulary words are separated from the total context subtest.

6. Comprehension questions -- 8 items and 1 example
   The child reads one or two simple sentences and answers two or three questions about the sentences.

Attitude Subtests

1. Emotions -- 5 items and 1 example
   Child marks one of two pictures that shows the way he feels (happy or sad) in certain situations that are distinctively happy or sad.

2. Attitude to School and Reading -- 9 items
   Child marks one of two pictures that shows how he feels (happy or sad) in certain school situations (6 items) and in certain reading situations (3 items).

3. Subject Preference -- 10 items and 1 example
   Five subjects that children encounter in school (reading, arithmetic, social studies, art, and spelling) are paired in every possible combination. For each pair, the child marks the one he or she likes more.

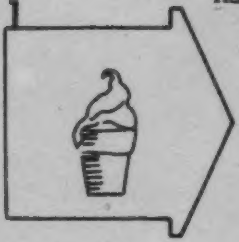
Metropolitan Achievement Tests

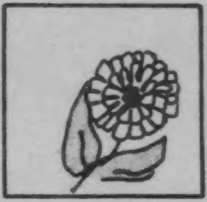
The following forms were administered to each grade:

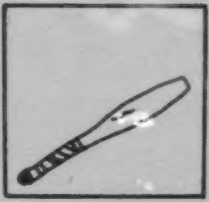
Grade	Pretest	Posttest
1	Primer	Primary I
2	Primary I	Primary II
3 and 4	Primary II	Elementary

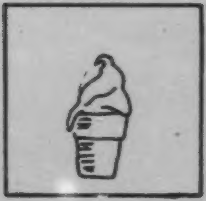
Matching

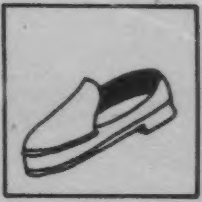
1











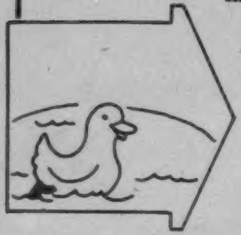
2	so	it	he	by	so
3	bar	cat	bin	bar	den
4	top	top	pot	opt	tap

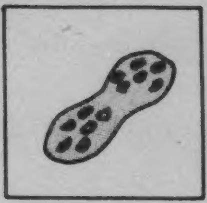
Matching

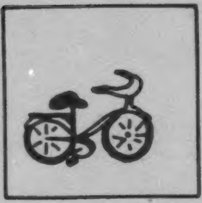
5	hit	hot	hit	hut	hat
6	three	three	tree	there	street
7	latter	later	litter	latter	letter
8	crow	chow	grow	brow	crow
9	past	path	patch	past	pass

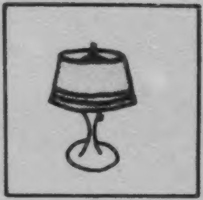
Initial sounds

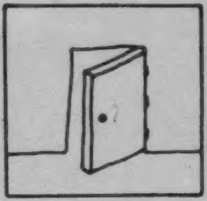
1 Example



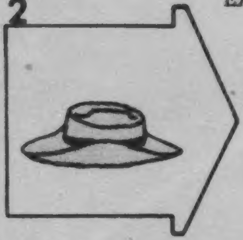






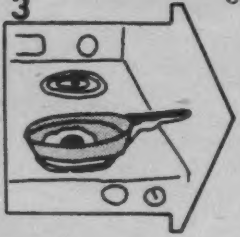


2 Example



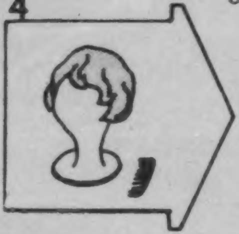
h b c m

3 Consonants



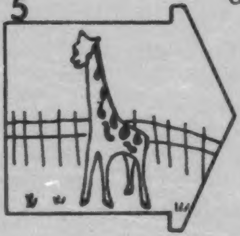
m b n p

4 Consonants



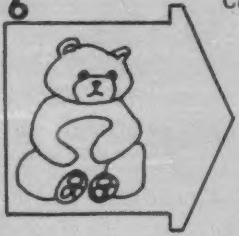
w y m i

5 Consonants



k c g q

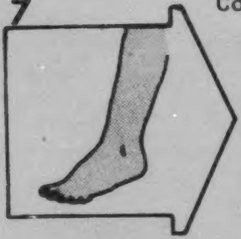
6 Consonants



g b w m

7

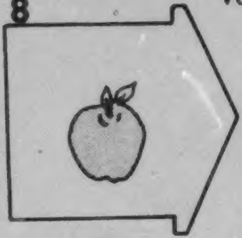
Consonants



r	v	f	w

8

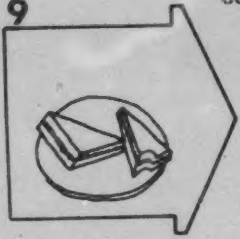
Vowels



e	i	o	a

9

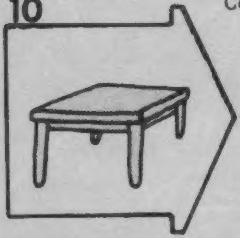
Consonants



z	s	t	g

10

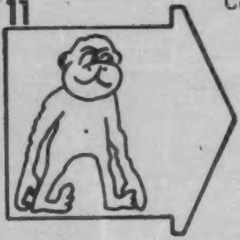
Consonants



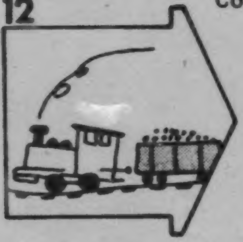
t	c	h	p

11

Consonants

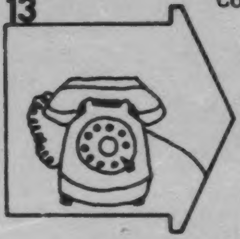


k	c	j	g

12


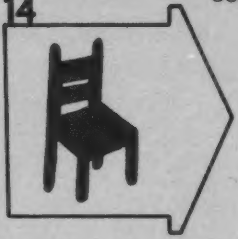
Consonant blends

sk	br	tr	sh

13


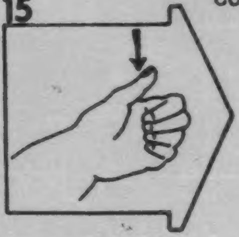
Consonant digraphs

ph	po	sh	vo

14


Consonant digraphs

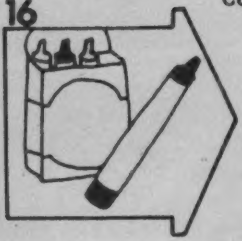
cr	ch	cl	sh

15


Consonant digraphs

sh	tu	du	th

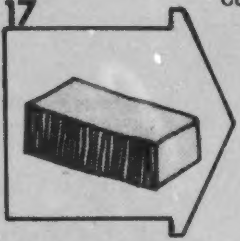
16



Consonant blends

ch	gr	br	cr

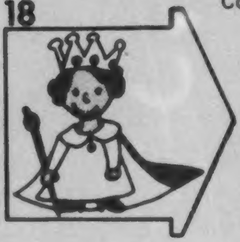
17



Consonant blends

br	sn	ch	fr

18



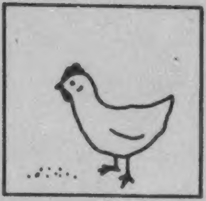
Consonants

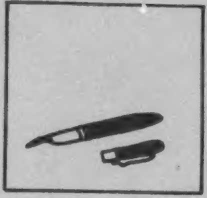
gr	ce	qu	wi

Rhyme

Example

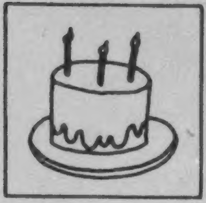
1

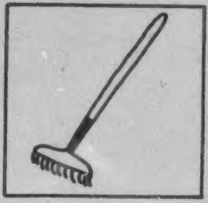




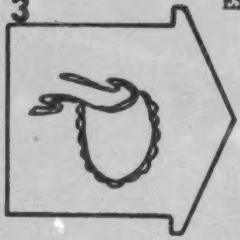
Example

2



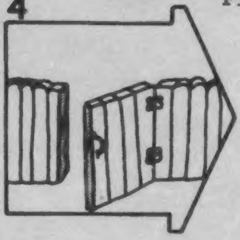


3 Example



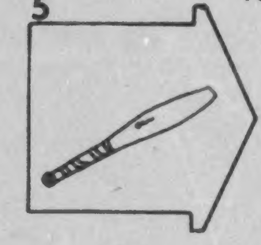
rat	rap	rib	rod

4 Final e



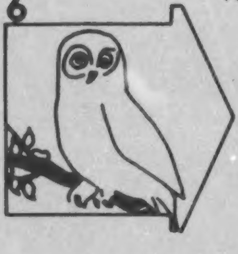
mat	meet	met	mate

5 Vowels



hot	hit	hut	hat

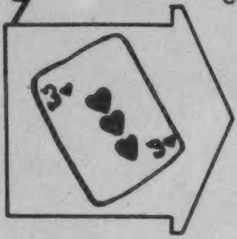
6 Vowel combinations



foul	foil	fail	fool

7

Controlled vowels



beard

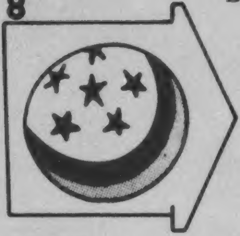
bard

bird

board

8

Larger spelling patterns



tail

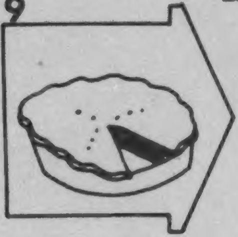
tell

tall

tale

9

Larger spelling patterns



hoe

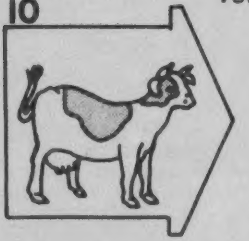
he

hoo

high

10

Vowel combinations



new

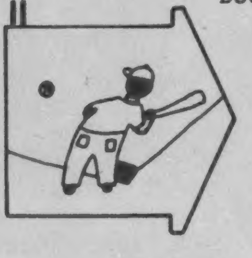
now

nigh

no

11

Double consonants



latter

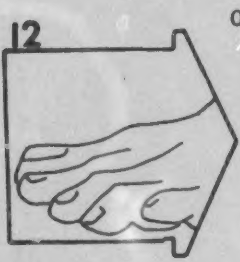
litter

later

letter

12

Open syllables



sigh

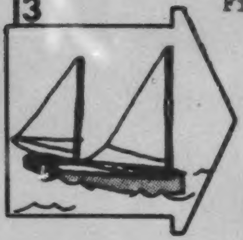
see

so

soy

13

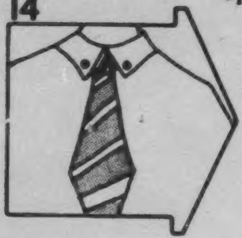
Final e



net	not	note	neat

14

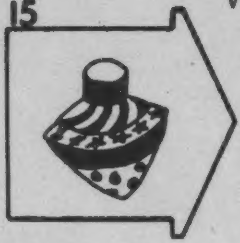
Open syllables



hey	ho	he	hi

15

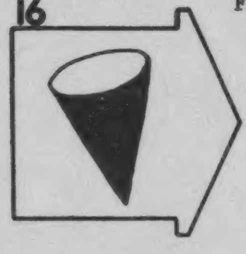
Vowels



pep	pop	pip	pup

16

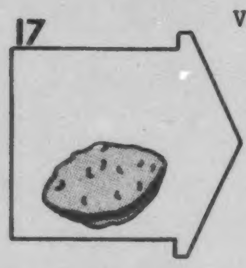
Final e



tone	ton	teen	tan

17

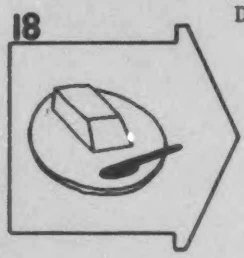
Vowels



hat	hit	hot	hut

18

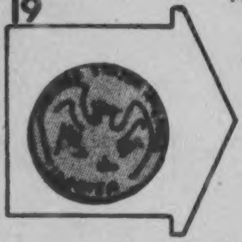
Double consonants



cater	cuter	cutter	citer

19

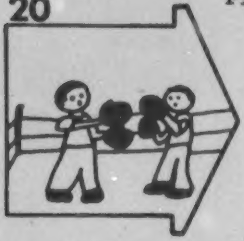
Vowel combinations



lion	loon	loin	learn

20

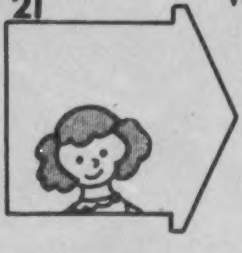
Final e



kit	kite	cot	cat

21

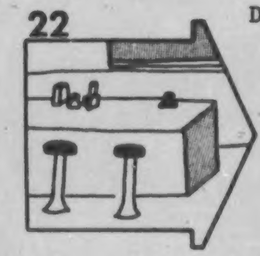
Vowels



bed	bid	bad	bud

22

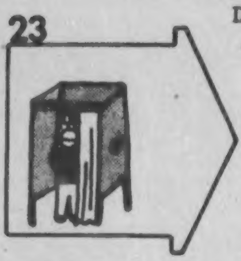
Double consonants



pinner	piner	penner	paner

23

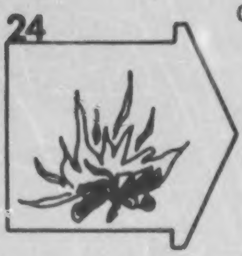
Double consonants



tooter	teeter	totter	toter

24

Controlled vowels



turn	torn	tan	tire

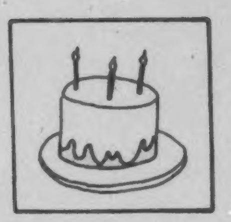
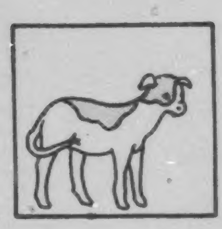
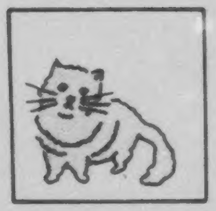
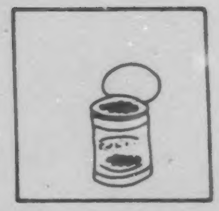
Rhyme of different spellings

25	Vowel combinations	neat	fat	feet	fate	fight
26	Controlled vowels	bird	hired	hoard	hard	herd
27	Open syllables	see	he	hie	hoe	how
28	Vowel combinations	bowl	cool	coal	coil	curl
29	Open syllables	foe	new	nigh	nay	no
30	Vowel combinations	cane	mine	man	main	moan

Ending sounds

1 Example

____t

2 Consonants

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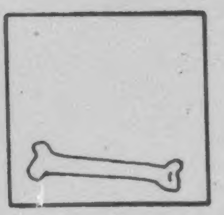
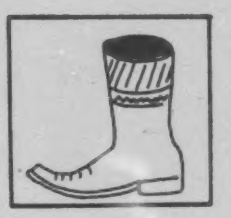
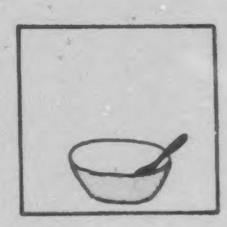
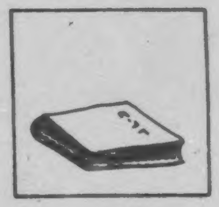

3 Consonant blends

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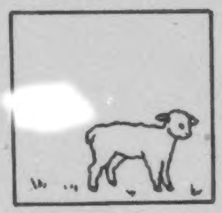
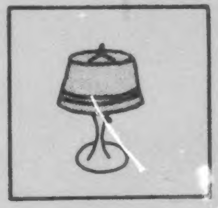
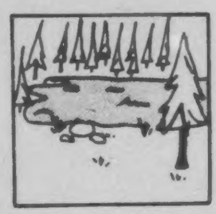
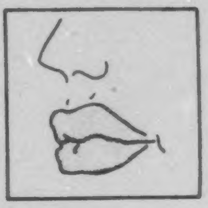
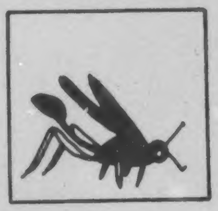
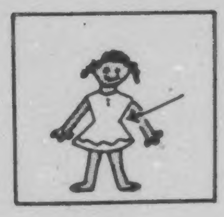
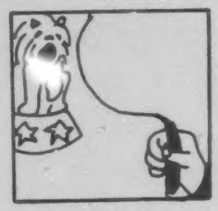
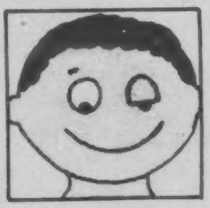





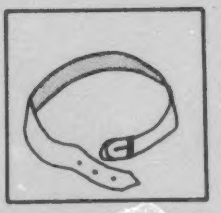
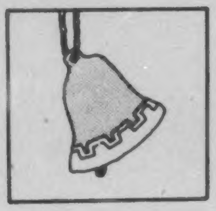
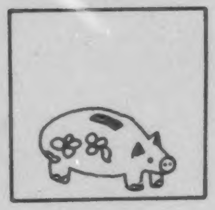
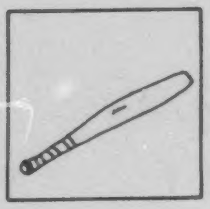
4 Consonant blends

____nk

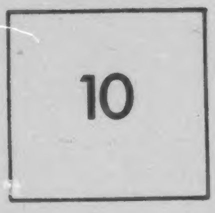
5 Consonant blends

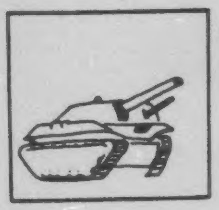
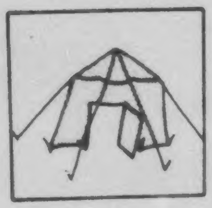
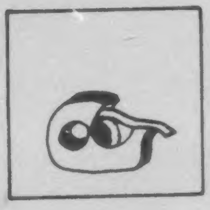
____lt

6 Consonant blends

____nt

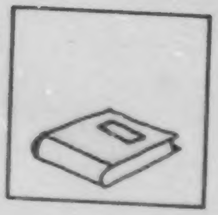
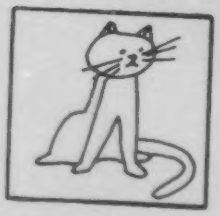
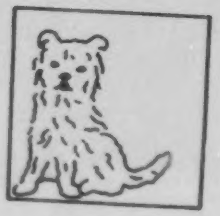
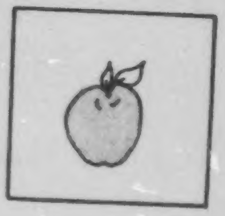


Matching pictures to words

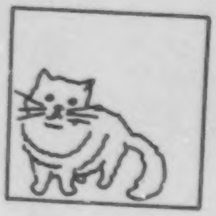
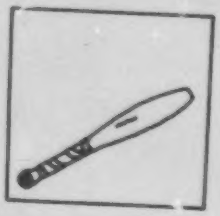
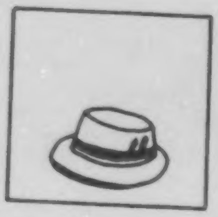
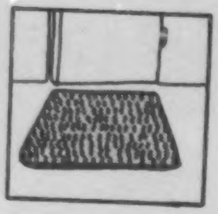
1 Example

dog

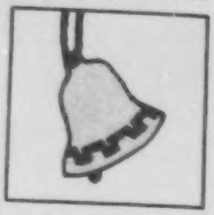
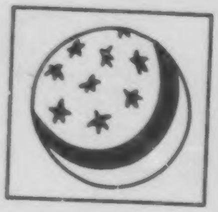
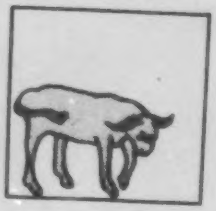
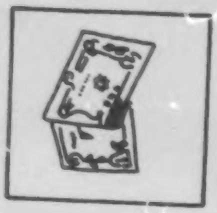
2 Consonants

cat

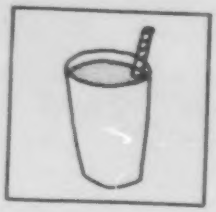
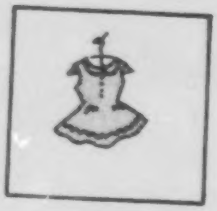
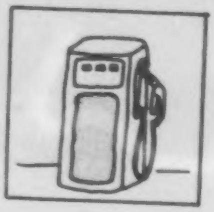
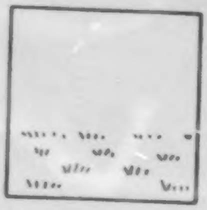
3 Larger spelling patterns

ball

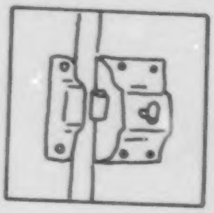
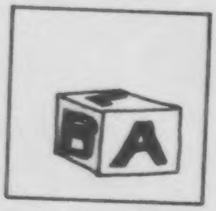
4 Consonant blends

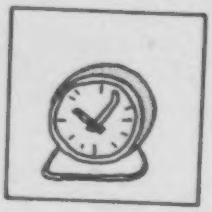
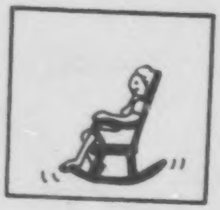
grass

5 Consonant blends

clock

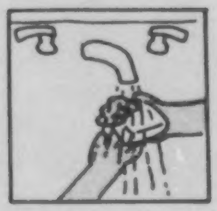
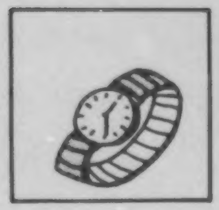
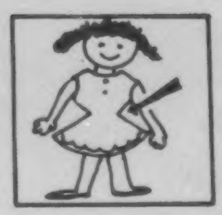
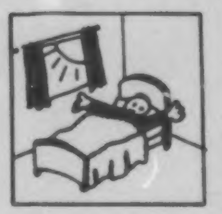



6

Consonant digraphs

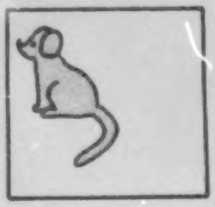
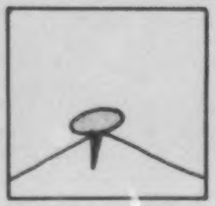
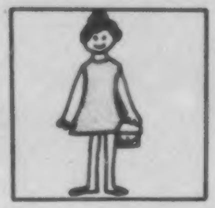
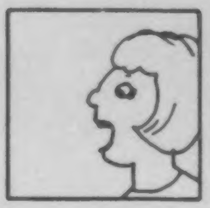
wash

7

Larger spelling patterns

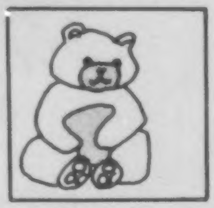
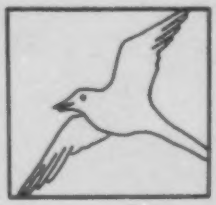
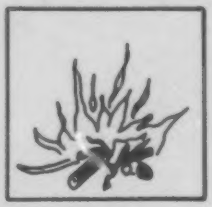
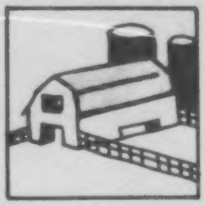
talk

8

Controlled vowels

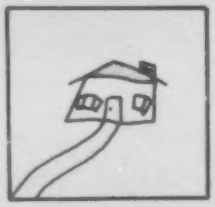
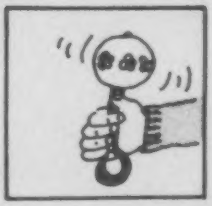
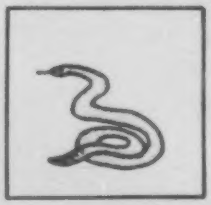
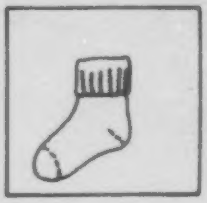
burn

9

Consonant digraphs

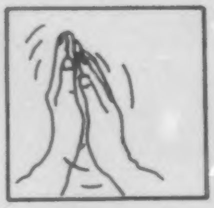
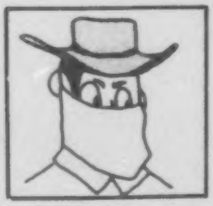
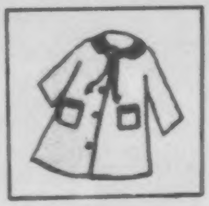
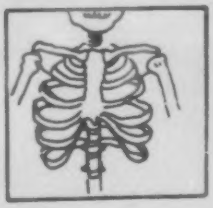
shake

10

Final e

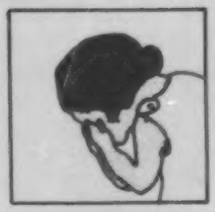
robe

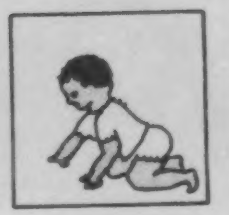





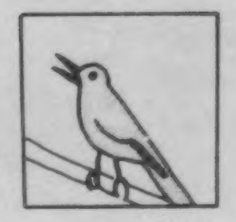
11

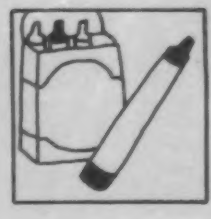
Vowels

cry





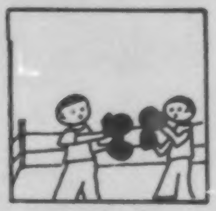


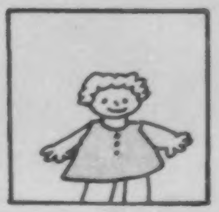


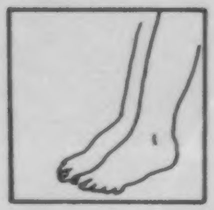
12

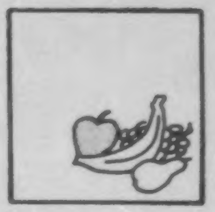
Vowel combinations

feet









13

Final e

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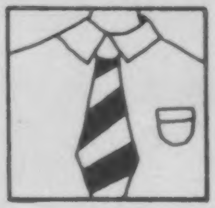
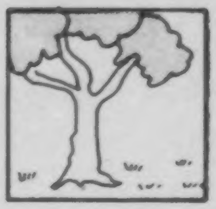
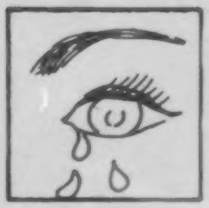
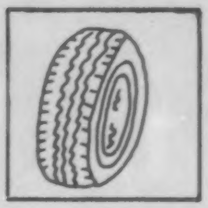






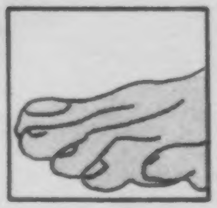


14

Vowel combinations

toe

2



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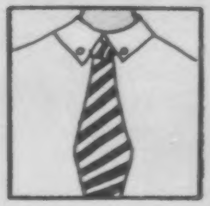
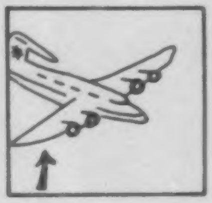
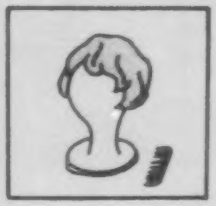


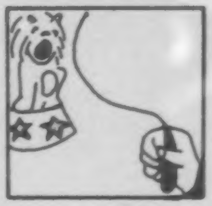
15

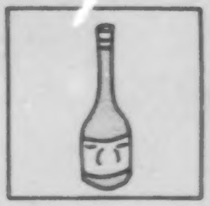
Larger spelling patterns

wing





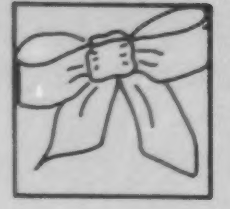
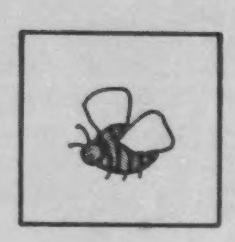
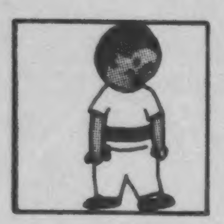
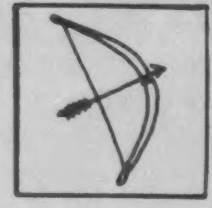




16

Vowel combinations

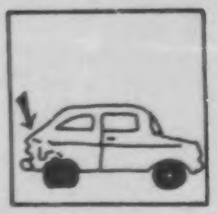
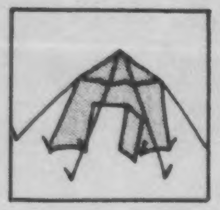
boy

17

Consonants

ten

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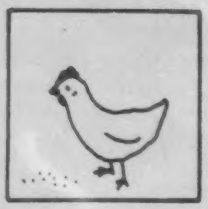
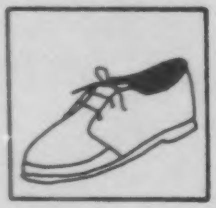
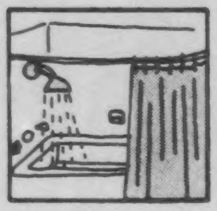
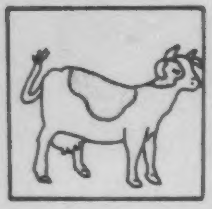
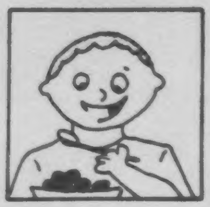


18

Consonant digraphs

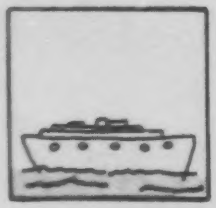
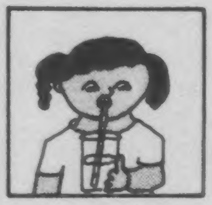
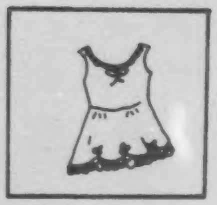
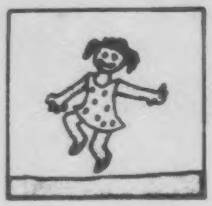
chew

19

Consonants

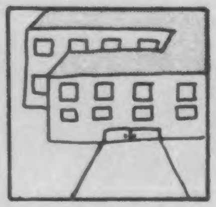
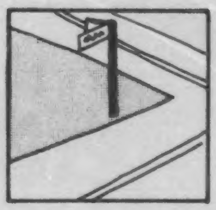
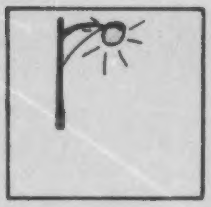
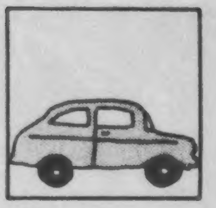
sip

Sight words

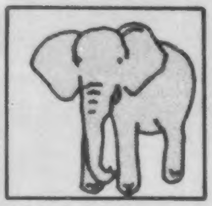
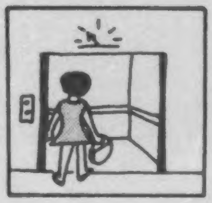
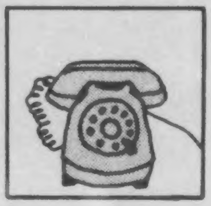
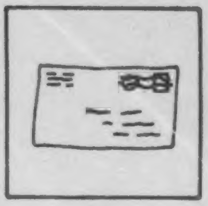
20

AVENUE

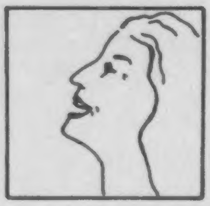
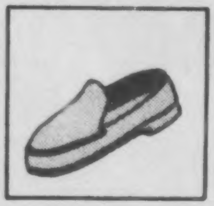
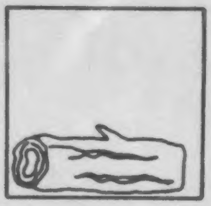
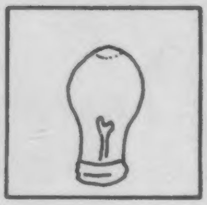
21

elevator

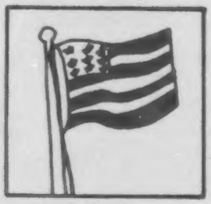
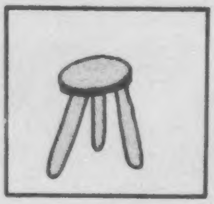
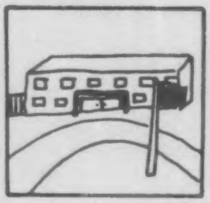
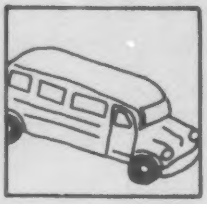
22

laugh

23

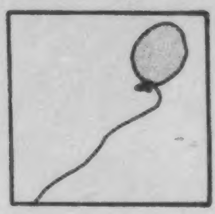
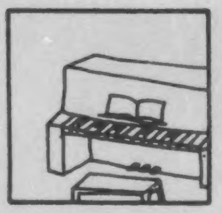
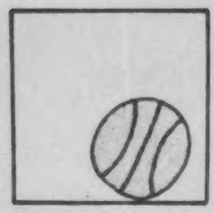
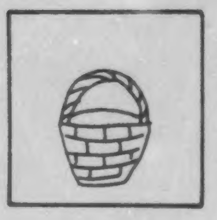
school

Context (vocabulary)

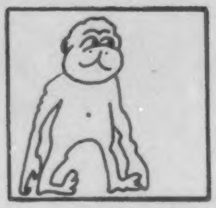
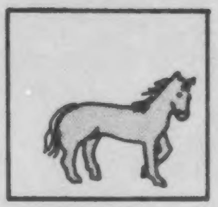
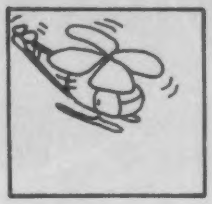
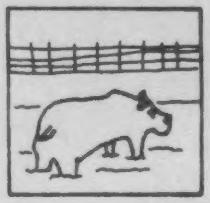
24

basketball

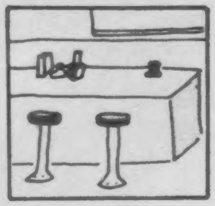
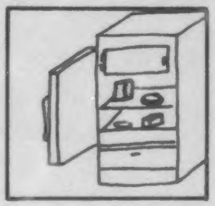
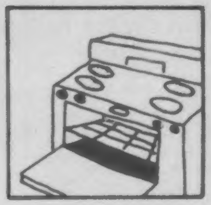
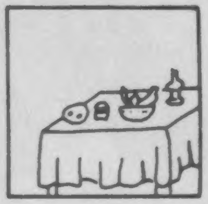
25

hippopotamus

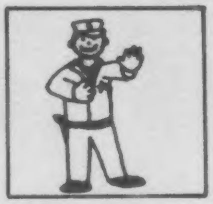
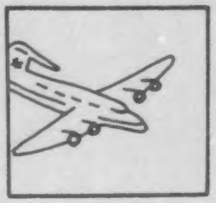
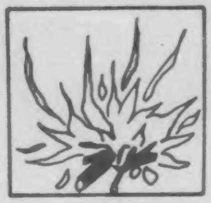
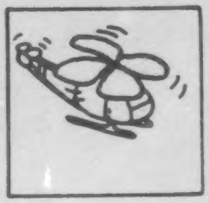
26

refrigerator

27

helicopter

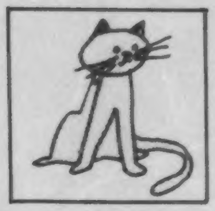
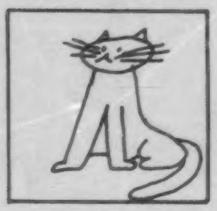
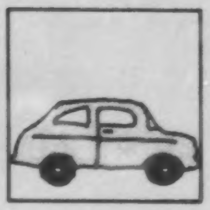
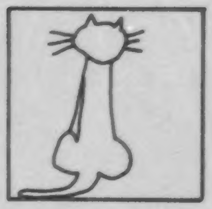





Sentences

Example

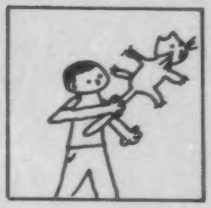
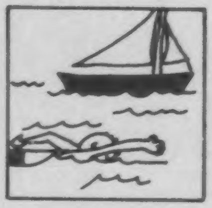
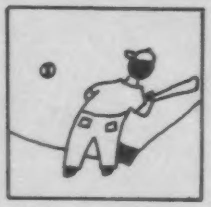
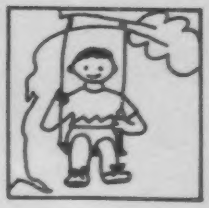
1

black cat

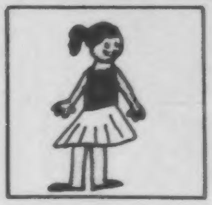
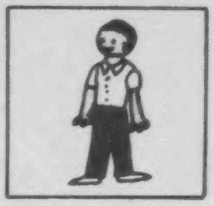
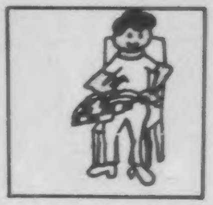
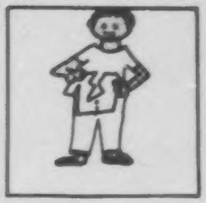
2

He swings the bat.

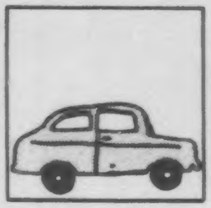
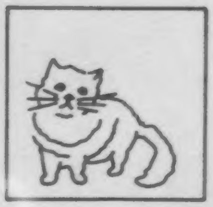
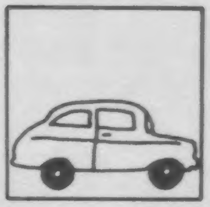
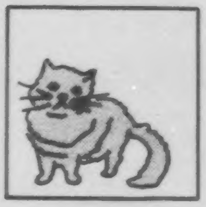
3

She is wearing a skirt.

4

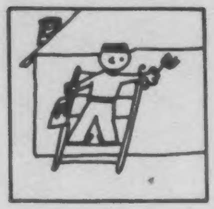
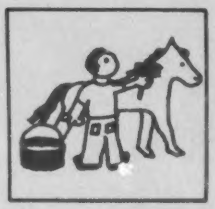
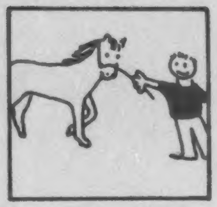
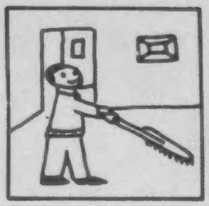
The car is white.

Sentences

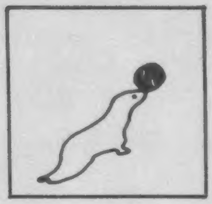
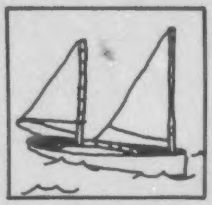
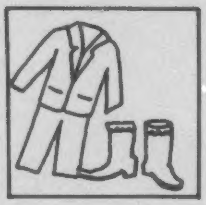
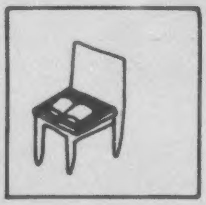
5

He is
cleaning
the horse.

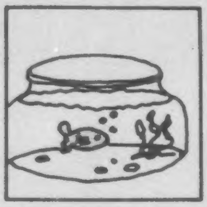
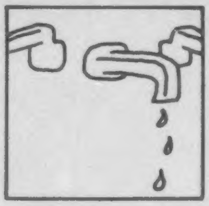
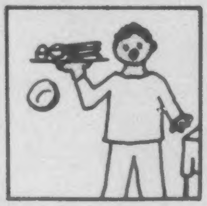
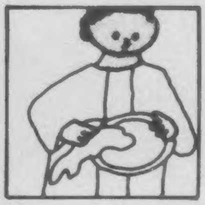
6

The book
is on the
seat.

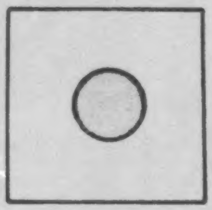
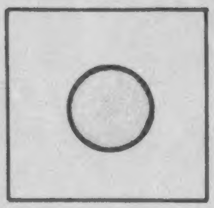
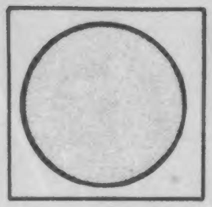
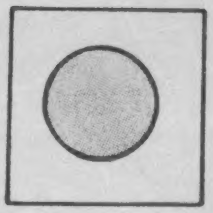
7

The waiter
drops a
dish.

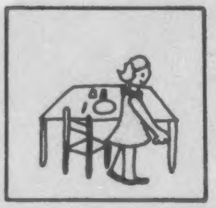
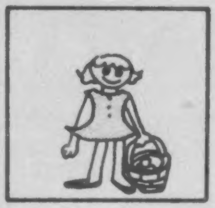
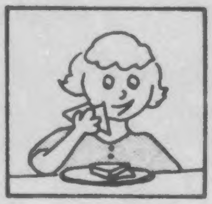
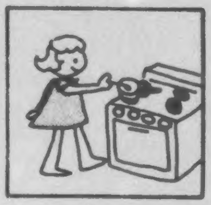
8

biggest

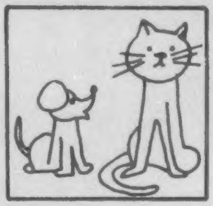
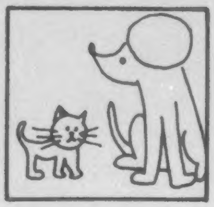
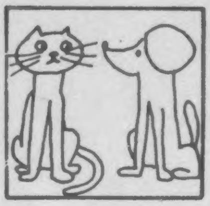
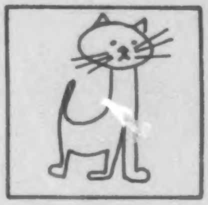
9

She is eating.

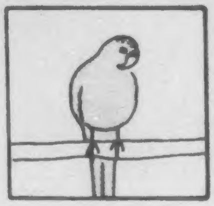
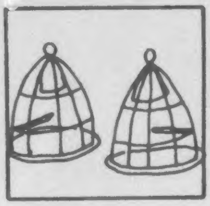
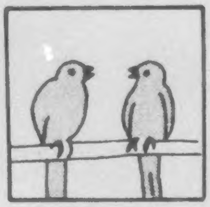
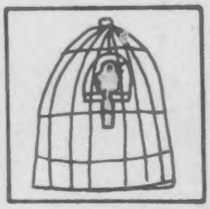
10

The cat is smaller.

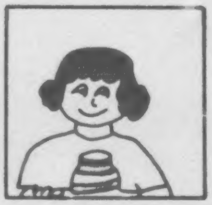
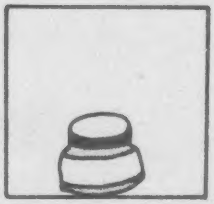
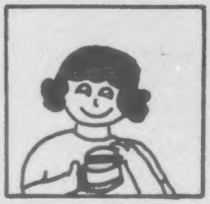
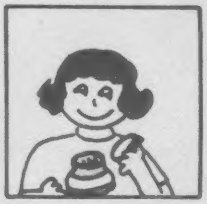
11

The bird's cage.

12

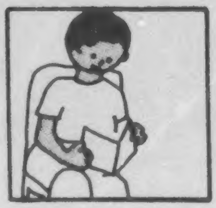
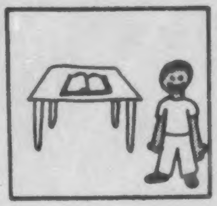
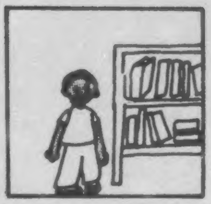
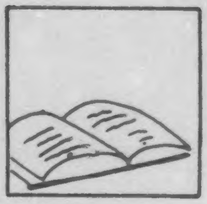
She opened the jar.

Morphemes

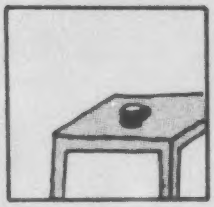
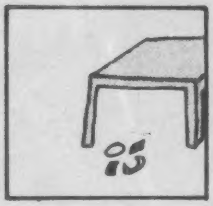
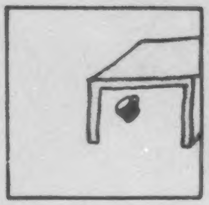
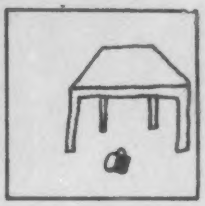
13

He is reading.

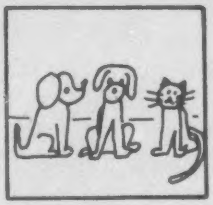
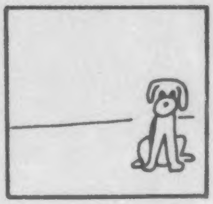
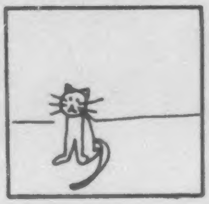
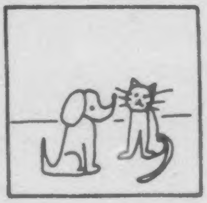
14

The cup didn't fall.

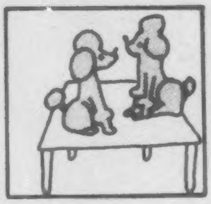
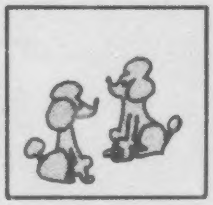
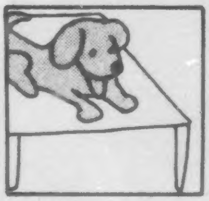
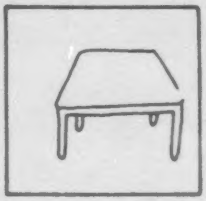
15

The cat isn't here.

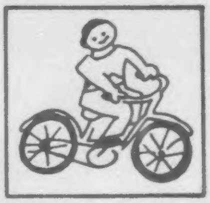
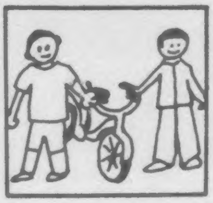
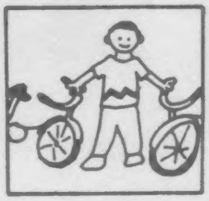
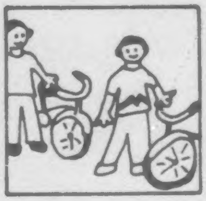
16

The dog's on the table.

17

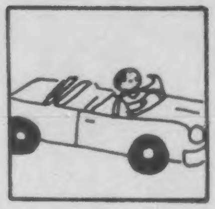
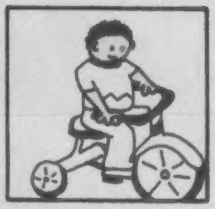
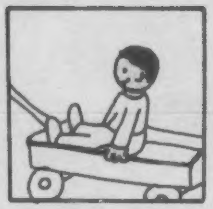
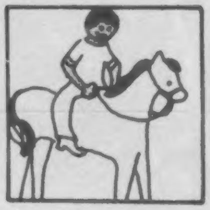
The boys have bikes.

Context

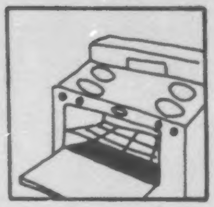
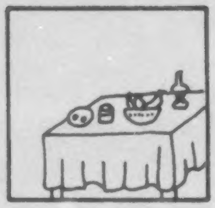
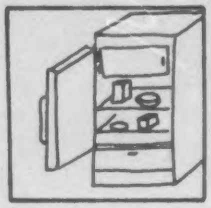
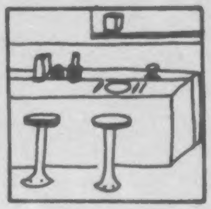
18

The little boy rides a tricycle.

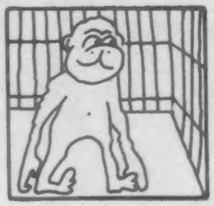
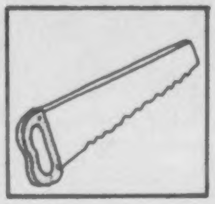
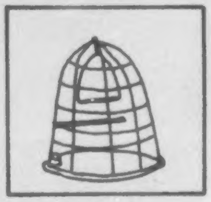
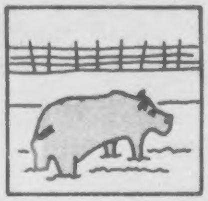
19

The food is in the refrigerator.

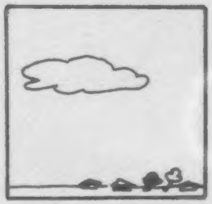
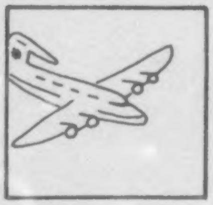
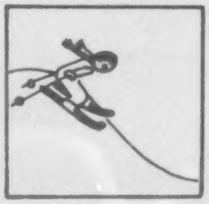
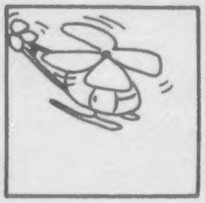
20

I saw a hippopotamus at the zoo.

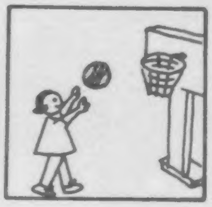
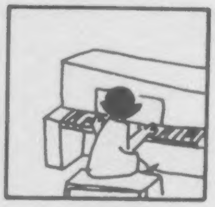
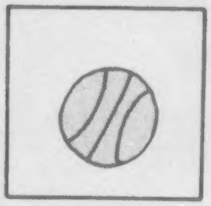
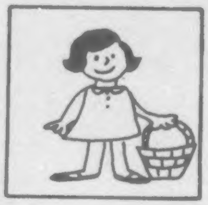
21

A helicopter is in the sky.

22

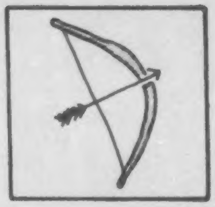
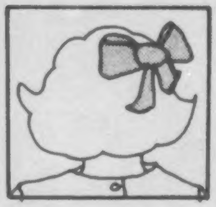
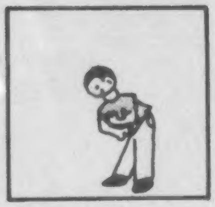
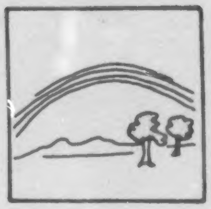
She plays basketball.

Context

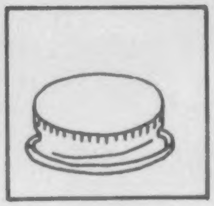
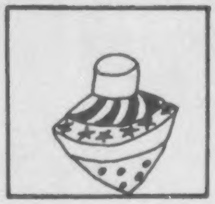
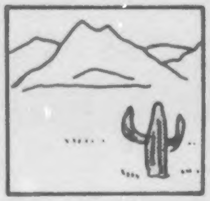
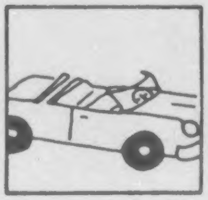
23

Here is a bow for her hair.

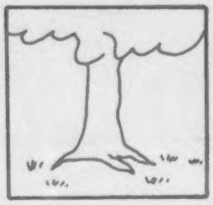
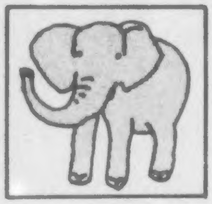
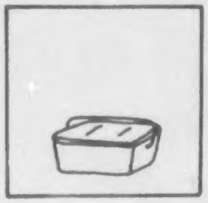
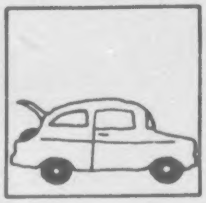
24

The top fits on the bottle.

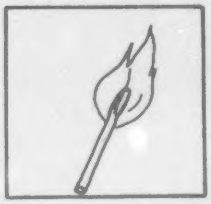
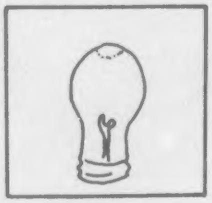
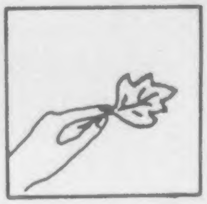
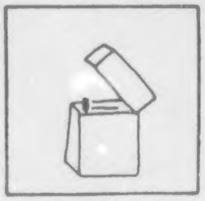
25

The trunk holds the car's tire.

26

It is light and grows in trees.

The bus stopped at the school.

1	Where is the bus?	at a stop sign	on the way to school	in front of the school	near the school bus
2	What stopped?	stop	bus	school	sign

Example (row 1)

Comprehension questions (row 2)

Sue is a big dog.

Comprehension questions

3 What is Sue?

an animal	a bird	a boy	a bug

4 What size is Sue?

small	little	large	tiny

Tom is playing catch with his dad.

Comprehension questions

5 How many are playing?	one	two	three	four
6 What are they playing with?	a game	a bat	cards	a ball
7 Who is playing with Tom?	his father	catch	his friend	his dog

Joe can look through the bowl. He sees his pet swimming.

Comprehension questions

8 What is Joe's pet?	a fish	a cat	a dog	a bird
9 What is the bowl made of?	metal	wood	glass	clay

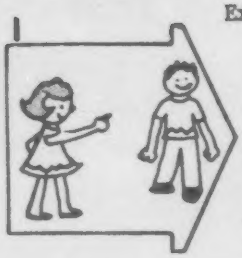
1	Example	The ______ is big.	pretty	hat	sits	fast
2	Syntax	The ______ are here.	sits	large	cats	happy
3		He talks ______.	on the phone	smile	slippers and shoes	is sitting
4		She ______ the book.	girl	sitting	nicely	reads

Syntax

5 They walk ______.	are nice	run	up the stairs	paper and pencil
6 The ______ apple is mine.	eat	big	mouth	fruit
7 I ______.	am going	the song	to come	a chair
8 The car is ______.	sadly	to do	goes	big

Example

1



Who is he.

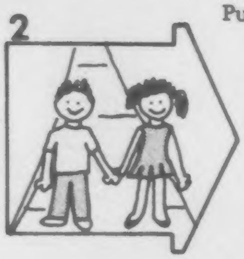
Who is he

Who is he?

Who is he,

Punctuation

2



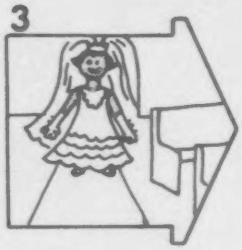
You and I went.

You and i went.

you and i went.

you and I went.

3



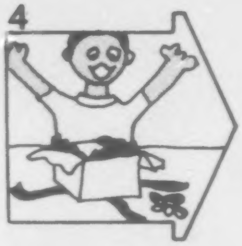
She said I do.

She said, "I do."

She said, I do.

She said: I do.

4



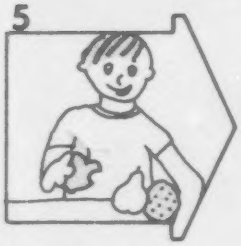
I see a present. Wow!

I see a present, wow.

I see a present. Wow.

I see a present, wow?

5



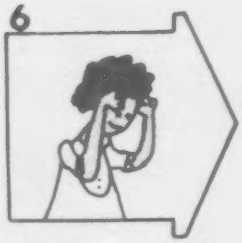
He eats pears apples, and oranges.

He eats pears. apples. and oranges.

He eats pears apples and oranges.

He eats pears, apples, and oranges.

6



where is Marge?

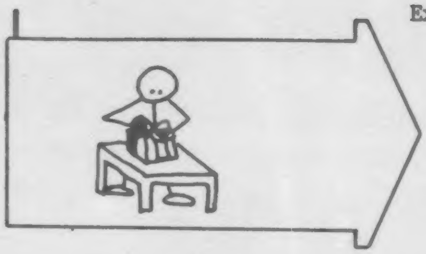
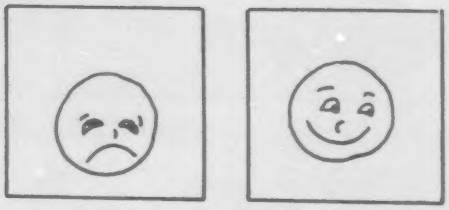
where is marge?

Where is Marge?

Where is marge?

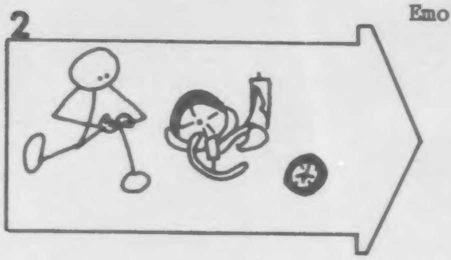
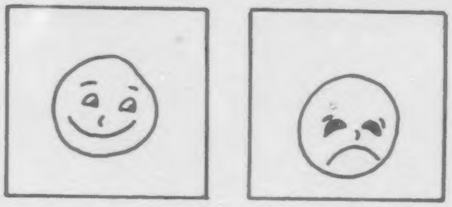
1

Example

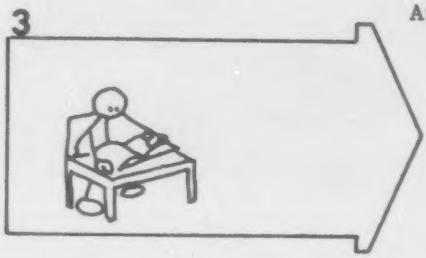
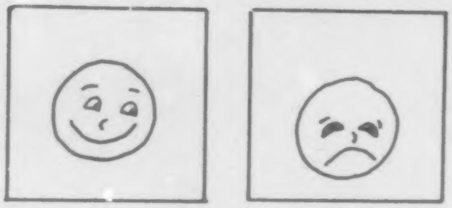
2

Emotions

3

Attitude

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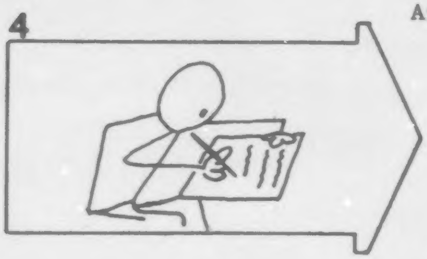
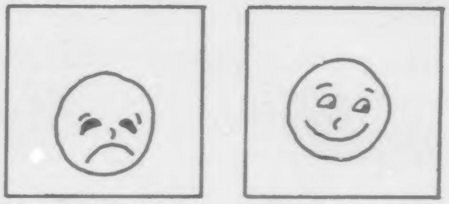

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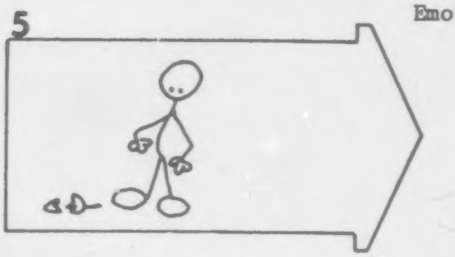
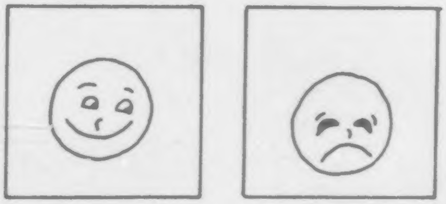
Emotions

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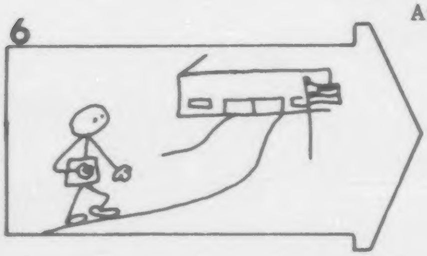
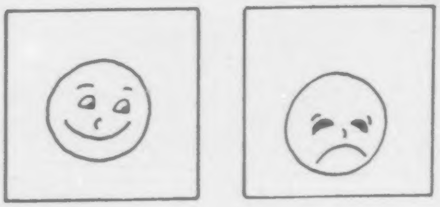

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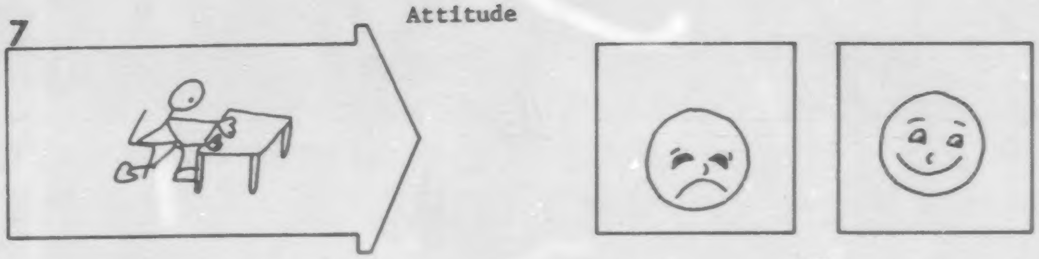
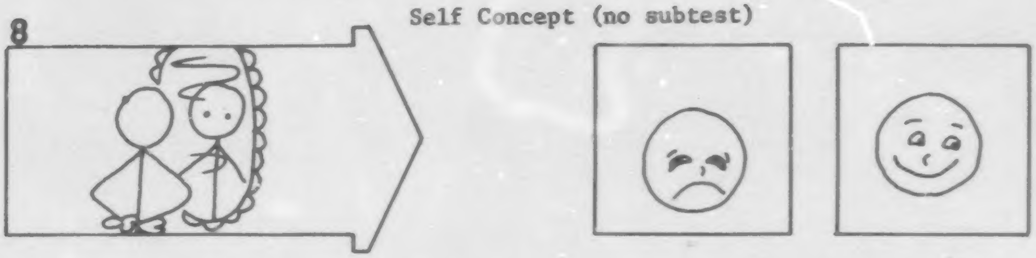


Self Concept (no subtest)



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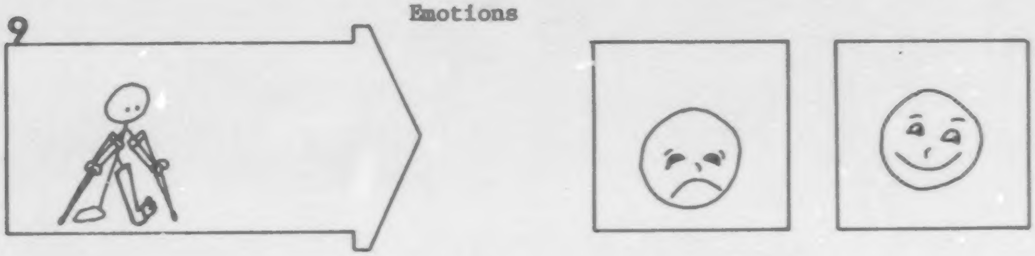

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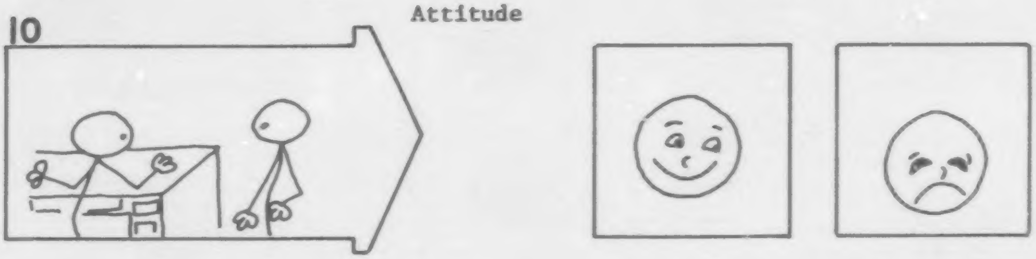
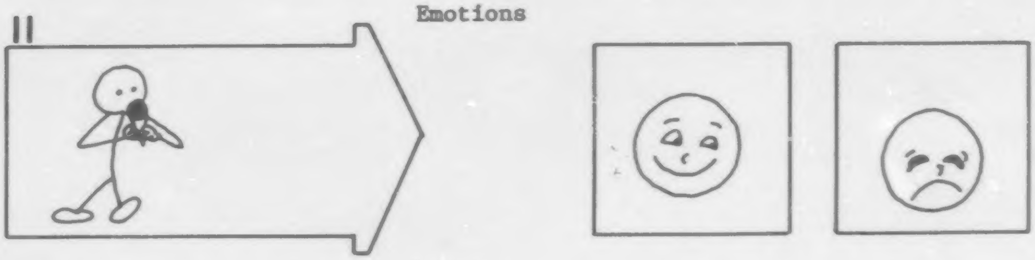
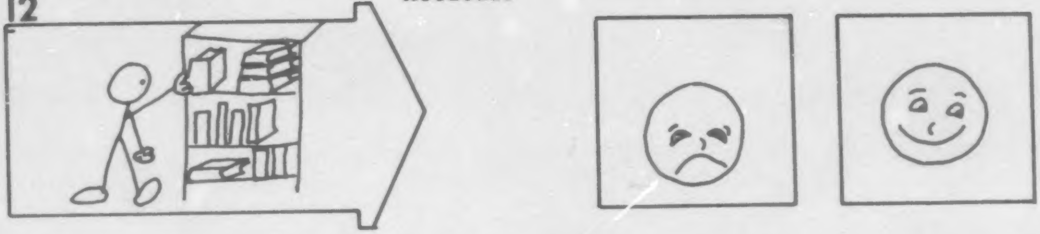


Emotions



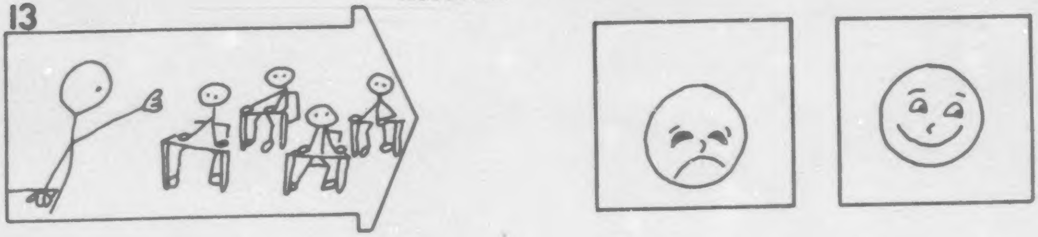
Attitude

12



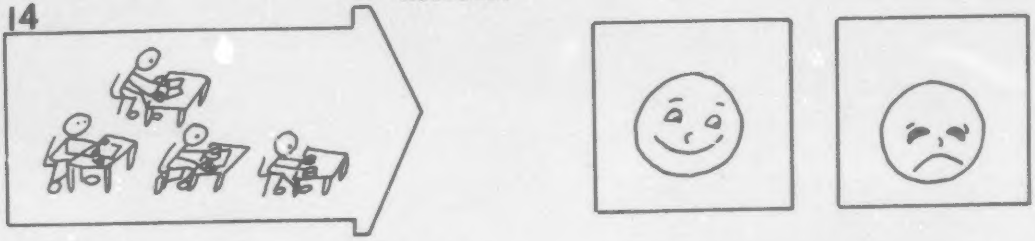
Attitude

13



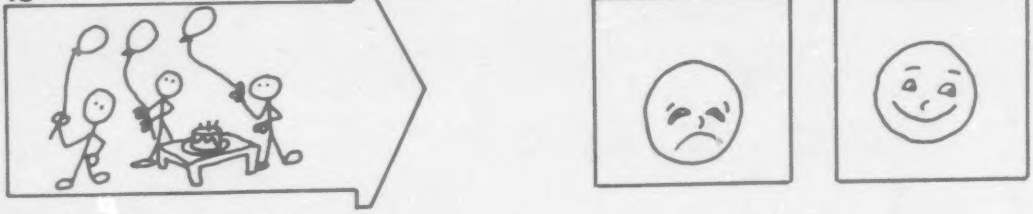
Attitude

14



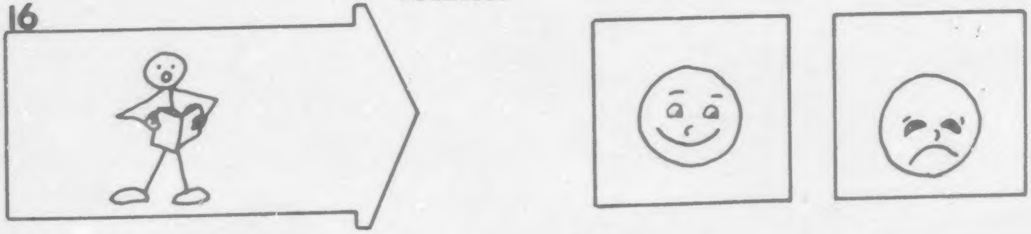
Emotions

15



Attitude

16



Preferences: reading, math, social studies, art, and spelling

Example

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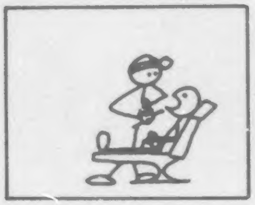
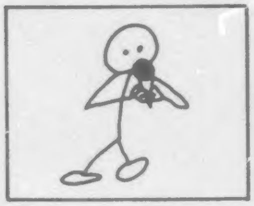

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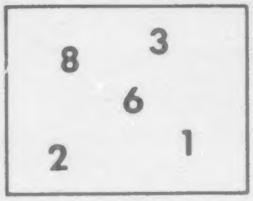

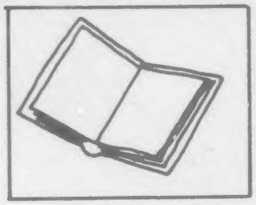

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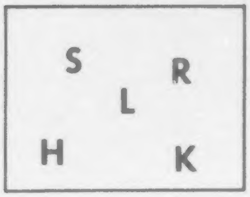

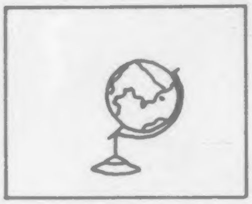

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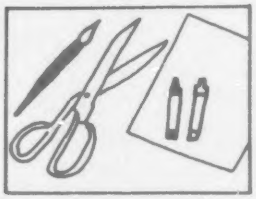
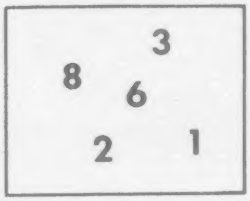

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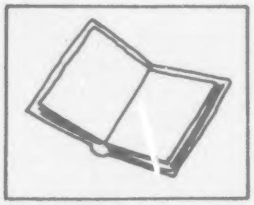
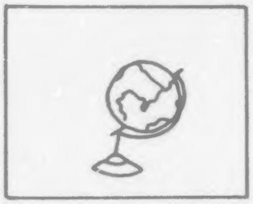
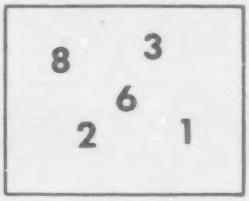
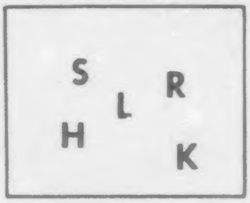



Preferences: reading, math, social studies, art, and spelling

6





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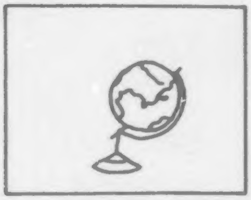

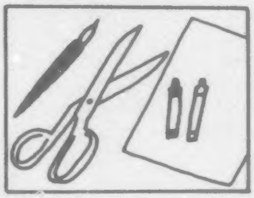

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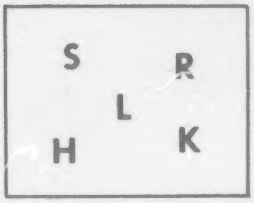

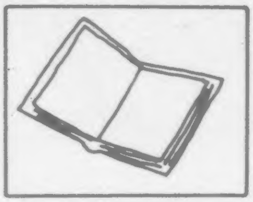

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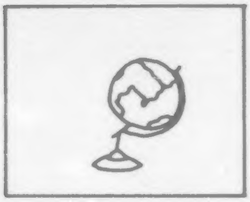

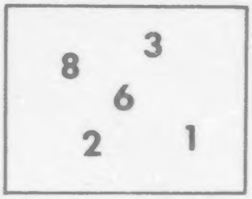

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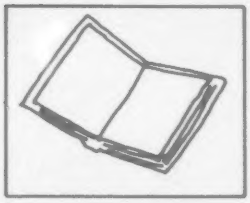

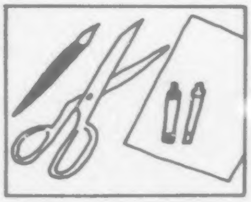

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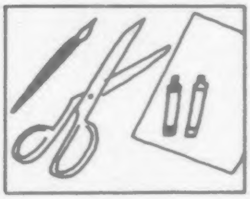

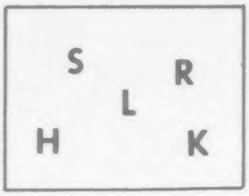

APPENDIX D

PRETEST TEACHER QUESTIONNAIRE

For ETS Use Only

1	2	3	4
☐	☐	☐	☐
City	Grade	Class	

5	6
☐	☐
School	

TEACHER QUESTIONNAIRE

1. Name ______________________________
(First) (Last)

2. Sex: Male. 1 7
Female. . . . . 2 (Circle one number)

3. Number of children in your current class. __________ 8, 9

4. Number of years of education completed. (Circle one number) 10, 11

14 or less 15 16 17 18 19 20 or more

5. Final degree received: (Circle one number) 12

Bachelors. 1
Masters. 2
Masters and further credits. 3
Doctors. 4
Other. 5

6. Number of years teaching experience: (not including this year) ________ 13, 14

7. Number of years teaching experience in present grade. ________ 15, 16

8. Have you ever had a course or courses in teaching reading in the elementary school? (Circle one number) 17

Yes. 1
No 2

9. How many hours is this class in school each full week? ________ 18, 19

For the purpose of this questionnaire, you should think of reading as any work done in the classroom or school library with printed words. This includes, for example, phonics, sight reading, and writing words, but does not include experiential background, such as field trips, etc. to prepare children for actual reading actitivities.

10. We would appreciate getting estimates of the amount of time spent in several classroom activities. Consider the last full week of school and estimate the percentage of time this class received instruction in each area.

Miscellaneous (attendance, etc.)	______%	20, 21
Science	______%	22, 23
Arithmetic	______%	24, 25
Social Studies	______%	26, 27
Physical Education or Exercise	______%	28, 29
Language	______%	30, 31
Reading	______%	32, 33
Other (Specify)______________________________		34, 35
____		36, 37
Total:	100 %	

11. Within the reading area, what percentage of time did the class spend on each of the folloiwng activities during the last full week of school?

Blending (e.g., r-a-n; word families m-an, r-an)	______%	38, 39
Letter Groups as Units (e.g., ay, ph, ar, and ing)	______%	40, 41
Sight Words	______%	42, 43
Spelling Patterns (e.g., final e signalling a long vowel sound; double consonant signalling a short vowel sound)	______%	44, 45
Morphemes as Meaning Units (e.g., -ed signifies past; -n't signifies negative)	______%	46, 47
Syntax	______%	38, 49
Punctuation	______%	50, 51
Context Clues	______%	52, 53
Comprehension of Reading Material	______%	54, 55
Other (Specify) ______________________________		56, 57
____		58, 59
Total:	100 %	

12. Which one of the following terms comes close to describing your major classroom approach to the teaching of reading? (Circle one number) 60

Linguistic	1
Phonetic	2
Language Experience	3
Modified Alphabet (ita)	4
Eclectic	5
Other (Specify)________________	6
Don't know	7

13. How long have you used this method? (Circle one number) 61

This is the first year	1
For one or two years	2
For three or four years	3
For five years or more	4

14. In the course of reading instruction during the year, how much time does your class spend in each of the following activities? (Circle one number for each activity) 62-66

	Considerable Amount	Moderate Amount	Some, not much	Little or none
Phonic Drill	1	2	3	4
Whole Word Drill	1	2	3	4
Silent Reading	1	2	3	4
Reading Aloud	1	2	3	4
Writing	1	2	3	4

15. With respect to structure, how would you characterize the method by which you teach reading? (Circle one number) 67

Highly structured	1
Moderately structured	2
Basically unstructured	3

16. Do you use any of the following materials in your classroom? (Circle one number for each listing) 68-84

	Major Source	Supplemental Source	Occasional Reference	Don't use at all
Basic Readers (Scott, Foresman & Company)	1	2	3	4
Open Highway (Scott, Foresman & Company)	1	2	3	4
Bank Street Readers (McMillan)	1	2	3	4
McMillan Basic Readers	1	2	3	4
Linguistic Readers (Harper and Row)	1	2	3	4
Harper & Row Basic Readers	1	2	3	4
One Hundred Edition (Ginn & Company)	1	2	3	4
Basic Readers (Ginn & Company)	1	2	3	4
Betts and Welch	1	2	3	4
Burnell-Loft Specific Skill Builders	1	2	3	4
Economy	1	2	3	4
Harcourt, Brace Series	1	2	3	4
In the City Series (Laidlow)	1	2	3	4
Lippincott Basic Reading Series	1	2	3	4
Programmed Instruction	1	2	3	4
Sheldon Basic Reading Series	1	2	3	4
Sullivan	1	2	3	4

17. Which of the following pieces of equipment are available to you for use in your classroom? (Circle one number for each listing) 85-94

	Located in the classroom	Shared with several other classrooms	Available occa-sionally	Not Available
Academic games	1	2	3	4
Dictionary	1	2	3	4
Globe	1	2	3	4
Encyclopedia	1	2	3	4
Language master	1	2	3	4
Slide projector	1	2	3	4
Film strip projector	1	2	3	4
Record player	1	2	3	4
Tape recorder	1	2	3	4
TV Set	1	2	3	4

18. Does your school have a library? (Circle one number) 95

Yes. 1
No 2

19. Does your class visit the school library or a public library on any kind of regular basis? (Circle one number) 96

Yes. 1
No 2

20. Are books available in your classroom for the children to read other than their regular texts? (Circle one number) 97

Yes. 1
No 2

21. Approximately how many books for your children are in the classroom library? ________ 98-100

22. How many students in your present class do you think need extra/remedial reading instruction? ______ 101, 102

23. Does your school have classes in extra/remedial reading? (Circle one number) 103

Yes. 1
No 2

24. On a scale from 1 to 5, with 1 being very useful, rate each of the following as to its usefulness in helping BELOW AVERAGE READERS in grades 2 and 3. (Circle one number for each listing) 104-107

	Very Useful				Not at all Useful	Don't Know
Educational TV when viewed during the class day. . .	1	2	3	4	5	6
Educational TV when viewed at home	1	2	3	4	5	6
Phonics approach to reading	1	2	3	4	5	6
Linguistic approach to reading	1	2	3	4	5	6

25. On a scale from 1 to 5, with 1 being very useful, rate each of the following as to its usefulness in teaching ABOVE AVERAGE READERS to read. (Circle one number for each listing) 108-111

	Very Useful				Not at all Useful	Don't Know
Educational TV when viewed during the class day. . .	1	2	3	4	5	6
Educational TV when viewed at home	1	2	3	4	5	6
Phonics approach to reading	1	2	3	4	5	6
Linguistic approach to reading	1	2	3	4	5	6

26. How useful do you think Sesame Street has been in helping preschool children prepare for school? (Circle one number) 112

Very Useful				Not at all Useful	Don't Know
1	2	3	4	5	6

27. If you were a preschool teacher, would you use Sesame Street as part of your in-school curriculum? (Circle one number) 113

Yes, almost daily. 1
Yes, about once or twice a week. 2
Yes, but only about once or twice a month. 3
No, never. 4

28. How useful do you think the TV show The Electric Company has been in helping children in their reading? 114

Very Useful				Not at all Useful	Don't Know
1	2	3	4	5	6

29. Did your class watch The Electric Company last year? (Circle one number) 115

Yes. 1
No 2
This is my first year of teaching. . . . 3

30. If your class watched The Electric Company last year, about how many times a week was it viewed in your classroom on the average? (Circle one number) 116

Once a week or less. 1
Twice a week 2
Three times a week 3
Four times a week. 4
Five times a week. 5

31. Was your class part of the Educational Testing Service evaluation of The Electric Company last year? (This includes both classes that viewed the show and classes that did not view the show.) (Circle one number) 117

Yes. 1
No 2

Do you agree or disagree with the following statements about the children in your class?

32. With proper instruction, most of the children in my class can learn to read well. (Circle one number) 118

Agree strongly. 1
Agree somewhat. 2
Don't know. 3
Disagree somewhat 4
Disagree strongly 5

33. No matter how good the reading instruction the pupils in my class receive, most of them will score low on reading tests. (Circle one number) 119

Agree strongly. 1
Agree somewhat. 2
Don't know. 3
Disagree somewhat 4
Disagree strongly 5

34. Most of the children in my class do not want to learn how to read. (Circle one number) 120

Agree strongly. 1
Agree somewhat. 2
Don't know. 3
Disagree somewhat 4
Disagree strongly 5

35. Do you teach reading to the students in your class? 121

Yes. 1
No 2

36. Are there any other teachers who teach reading to all or some of the students in your class? 122

Yes. 1
No 2

37. If others teach reading, what is his/her name, and how many students are taught by this person?

Name	# of children taught

38. Are there any aides or student teachers regularly in your classroom? 123

Yes.	1
No	2

39. How are children grouped for reading instruction in your class? 124

Entire class taught together.	1
Class divided into groups according to reading ability	2
Class divided into groups on a basis other than reading ability.	3
Each child works independently and at his or her own pace.	4

Other (Specify)______________________________

____

40. In general, how would you describe the ability level of the children in your class? 125

Heterogeneous group, with some of high ability, some low ability, and some average ability	1
Homogeneous group, with most of high ability.	2
Homogeneous group, with most of average ability	3
Homogeneous group, with most of low ability .	4

Other (Specify)______________________________

____

41. Which of the following kinds of teaching activities do you enjoy most? (Circle one number) 126

Arithmetic	1
Reading	2
Science	3
Social Studies	4
Physical Education	5

42. Which of the following kinds of teaching activities do you enjoy least? (Circle one number) 127

Arithmetic	1
Reading	2
Science	3
Social Studies	4
Physical Education	5

*Answer questions 43-51 about your job by circling YES or NO for each. 128-134

	1	2
43. Was teaching your first choice as a profession?	YES	NO
44. If you had it to do all over again, would you enter a different profession?	YES	NO
45. Do you think the families of the majority of children in this class are supportive of your efforts as a teacher?	YES	NO
46. Do you think too much of your time and energy has to be diverted to activities other than helping children learn and develop?	YES	NO
47. Would you rather teach older or younger children?	YES	NO
48. Do you generally have an adequate supply of classroom materials?	YES	NO
49. Do you feel that your community assigns low status to primary teachers?	YES	NO

---

*Questions 43 to 94 are used by permission from Educational Testing Service, CIRCUS Teacher Questionnaire, copyright 1972.

	1	2	
50. Do you think the size of your class is too large?	YES	NO	135
51. If you didn't have to teach next year, would you?	YES	NO	136

Educational Viewpoints

Here are some ideas that different people have about primary children and programs. For each one, circle 137-145

A if you tend to agree with the statement

D if you tend to disagree with the statement

? if you can't decide whether you agree or disagree

Please use the ? as little as possible. Since these statements represent viewpoints or opinions, there are, of course, no right or wrong answers.

	1	2	3
52. It is important for teachers of young children to have training in child psychology as well as in education.	A	D	?
53. The primary school should be more concerned with social-emotional development than with intellectual development.	A	D	?
54. It is too early to encourage children to start reading at age five.	A	D	?
55. Parents should be encouraged to participate in class activities.	A	D	?
56. Children should be encouraged to tell the class or teacher about incidents that happen outside class, even if personal family matters are sometimes revealed.	A	D	?
57. Boys generally have more trouble learning language skills than girls do.	A	D	?
58. Children should be corrected if they fail to speak out at a time in a group setting or if they do not wait their turn to be called upon.	A	D	?
59. It is important to include a number of activities about children's own cultures and ethnic groups in preprimary classes.	A	D	?
60. Children should have assigned seats and places during the class day.	A	D	?

146-161

	1	2	3
61. Most of the objectives of primary education are too intangible to measure or test.	A	D	?
62. There is a need for more male primary teachers.	A	D	?
63. Disadvantaged children generally have more trouble learning reading skills than middle-class children do.	A	D	?
64. Children will make more intellectual and personal-social progress if the teacher is from the same ethnic group as the majority of the class.	A	D	?
65. Children appreciate firm discipline.	A	D	?
66. It is important for the primary teacher to have at least two meetings or conferences with the parents or guardians of each child during the year.	A	D	?
67. Children learn best when there is fairly good order and a low noise level in the classroom.	A	D	?
68. Children should seldom be allowed to leave a task without completing it.	A	D	?
69. Children should be encouraged to speak in complete sentences at every possible opportunity.	A	D	?
70. Boys are usually more disruptive in the classroom than girls are.	A	D	?
71. During class hours, there should be more communications between the children and the teacher than between the children.	A	D	?
72. It is more effective for the teacher to work with individuals or small groups than with the class as a whole.	A	D	?
73. It is important for teachers to have schedules and activity plans worked out well in advance for primary classes.	A	D	?
74. Children should be encouraged to ask the teacher's permission before beginning a new activity on their own.	A	D	?
75. Children's language errors should be corrected immediately if possible.	A	D	?
76. Disadvantaged children generally have more trouble learning language skills than middle-class children do.	A	D	?

	1	2	3	162-170
77. Children can engage in meaningful learning by themselves or with other children, without the active involvement of the teacher.	A	D	?	
78. The home is the source of most of the difficulties children have in class.	A	D	?	
79. Each day's lessons and activities should be derived almost entirely from children's own interests and spontaneous questions or from incidents that occur in the environment.	A	D	?	
80. Bilingual children can be taught more effectively in separate classes.	A	D	?	
81. One of the teacher's most important responsibilities is to establish classroom rules and procedures and ensure that the children learn them.	A	D	?	
82. Parents should be involved in planning school activities.	A	D	?	
83. There should be some time during each day in class when children are free to choose any activities or materials they wish.	A	D	?	
84. Sensitive content (such as sex, death, birth, God, and fears) should be avoided as much as possible in primary classrooms.	A	D	?	
85. An informal classroom approach is not suitable for most children.	A	D	?	

Techniques

Here is a list of some techniques used by primary school teachers to try to correct or change a child's behavior. For each one, circle: 171-182

YES if you think it is sometimes appropriate to use the technique

NO if you think it is seldom or never appropriate to use the technique

		1	2
	Techniques	Appropriate?	
86.	Ignore the child	YES	NO
87.	Indicate your disapproval by a look or gesture	YES	NO
88.	Move closer to the child	YES	NO
89.	Physically restrain the child	YES	NO
90.	Give the child a firm command to stop	YES	NO
91.	Tell the child immediately what he/she should be doing	YES	NO
92.	Redirect the child to another activity	YES	NO
93.	Show child example of another child's good behavior	YES	NO
94.	Point out the child's poor behavior to the other children	YES	NO
95.	Isolate the child	YES	NO
96.	Talk over the situation privately with the child	YES	NO
97.	Physically strike or slap the child	YES	NO

Educational Objectives

Here is a list of ten goals of education. All of them are important; but please indicate their relative importance to you by circling: 183-192

1 if you think the goal is among the most important and critical of those listed

2 if you think the goal is of somewhat less importance

3 if you think the goal is among the least important of those listed

	Goals of Education	Most important	Less important	Least important
97.	To help child acquire an understanding of self and an appreciation of worthiness of self.	1	2	3
98.	To help child acquire an understanding and appreciation of persons belonging to social, cultural, and ethnic groups different from child's own.	1	2	3
99.	To help child acquire a mastery of basic word and number skills.	1	2	3
100.	To help child acquire a positive attitude toward the learning process.	1	2	3
101.	To help child acquire habits and attitudes of responsible citizenship.	1	2	3
102.	To help child acquire good health habits and an understanding of conditions necessary for physical and emotional well-being.	1	2	3
103.	To give child opportunity and encouragement to be creative.	1	2	3
104.	To help child understand opportunities available for a productive life and to enable child to take full advantage of these opportunities.	1	2	3
105.	To help child understand and appreciate human achievement in the natural and social sciences, the humanities, and the arts.	1	2	3
106.	To help child prepare for a world of rapid changes in which continuing education should be a normal expectation.	1	2	3

THANK YOU.

APPENDIX E

INTERIM TEACHER QUESTIONNAIRES

INTERIM TEACHER QUESTIONNAIRE

(only for teachers of classes who are viewing The Electric Company)

1 2 3 4
☐ ☐ ☐ ☐
City Grade Class

1. Teacher's Name ______________________________

2. During the last five school days, how many times did your class view The Electric Company? (Circle one number) 5

None.	0
Once.	1
Twice	2
Three times	3
Four times.	4
Five times.	5

3. On the average, since the show began, about how many times a week has your class viewed The Electric Company? (Circle one number) 6

Once a week or less	1
Twice a week.	2
Three times a week.	3
Four times a week	4
Five times a week	5

4. On the average, since the show began, about how many children present in your class on a particular day view The Electric Company when it is shown? (Circle one number) 7

Less than one quarter	1
About one quarter	2
About one-half.	3
About three-fourths	4
All or almost all	5

5. On the average, since the show began, about how much of each show does your class watch when it is shown? (Circle one number) 8

Less than ten minutes.	1
Ten to twenty minutes.	2
Twenty to twenty-five minutes.	3
All.	4

6. Are there any children in your class who, on a regular basis, do not watch The Electric Company when it is shown? (Circle one number) 9

Yes.	1
No	2

7. If yes, please name the child or children and briefly explain why he or she does not watch the show.

Child's Name	Reason

8. On the days your class views The Electric Company, approximately 30 minutes of the class day is used that otherwise would be available for other kinds of classroom activities. Over the course of the year so far, which of the following classroom activities has time been taken from in order to make room for The Electric Company viewing? Please estimate the percentage of time taken from each classroom activity. 10-30

Regular reading instruction. . . . . _____%
Other language arts. . . . . _____%
Other academic subjects (e.g., science, math, social studies). . . . . _____%
Physical education . . . . _____%
Rest period or lunch . . . . _____%
Art or music . . . . _____%
Other (specify)________________________________ _____%

Total: 100%

9. Please estimate the amount of time spent in the following classroom activities. Consider the last full week of school and estimate the percentage of time this class received instruction in each area. 31-57

Miscellaneous (attendance, etc.) . . . . _____%
Science. . . . . _____%
Arithmetic . . . . _____%
Social Studies . . . . _____%
Physical Education or Exercise . . . . _____%
Language . . . . _____%
Reading (include viewing of The Electric Compnay). _____%
Other (specify)________________________________ _____%
____ _____%

Total: 100%

INTERIM TEACHER QUESTIONNAIRE

(only for control teachers of classes who are not viewing The Electric Company)

1	2		3	4
☐	☐		☐	☐
City	Grade		Class	

1. Teacher's Name ____

2. Please estimate the amount of time spent in the following classroom activities. Consider the last full week of school and estimate the percentage of time this class received instruction in each area.

Miscellaneous (attendance, etc.).	____%
Science	____%
Arithmetic.	____%
Social Studies.	____%
Physical Education or Exercise.	____%
Language.	____%
Reading	____%
Other (specify)____________________________	____%
____	____%
Total:	100%

APPENDIX F

POSTTEST TEACHER QUESTIONNAIRE

For ETS Use Only

1	2	3	4
☐	☐	☐	☐
City	Grade	Class	

5	6
0	2

TEACHER QUESTIONNAIRE

We at Educational Testing Service thank you again for your cooperation this year in our efforts to evaluate The Electric Company. Your experiences will be shared with people throughout the country and will contribute to the continual improvement of the show.

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PART I. (for all teachers)

1. Name ______________________________
(First) (Last)

2. Number of children in your current class. ______ 8, 9

For the purpose of this questionnaire, you should think of reading as any work done in the classroom or school library with printed words. This includes, for example, phonics, sight reading, and writing words, but does not include experiential background, such as field trips, etc. to prepare children for actual reading activities.

3. We would appreciate getting estimates of the amount of time spent in several classroom activities. Consider the last full week of school and estimate the percentage of time this class received instruction in each area.

Miscellaneous (attendance, etc.)	_______%	10, 11
Science	_______%	12, 13
Arithmetic	_______%	14, 15
Social Studies	_______%	16, 17
Physical Education or Exercise	_______%	18, 19
Language	_______%	20, 21
Reading (include, if appropriate, viewing of The Electric Company)	_______%	22, 23
Other (Specify) ____________________	_______%	24, 25
____________________	_______%	26, 27
Total:	100 %	

4. Within the reading area, what percentage of time did the class spend on each of the following activities during the last full week of school?

		For ETS Use Only
Blending (e.g., r-a-n; word families m-an, r-an)	_______%	28, 29
Letter Groups as Units (e.g., ay, ph, ar, and ing)	_______%	30, 31
Sight Words	_______%	32, 33
Spelling Patterns (e.g., final e signalling a long vowel sound; double consonant signalling a short vowel sound)	_______%	34, 35
Morphemes as Meaning Units (e.g., -ed signifies past; -n't signifies negative)	_______%	36, 37
Syntax	_______%	38, 39
Punctuation	_______%	40, 41
Context Clues	_______%	42, 43
Comprehension of Reading Material	_______%	44, 45
Other (Specify) ______________________	_______%	46, 47
______________________________	_______%	48, 49
Total:	100 %	

5. Which one of the following terms comes close to describing your major classroom approach to the teaching of reading? (Circle one number) — 50

Linguistic.	1
Phonetic.	2
Language Experience	3
Modified Alphabet (ita)	4
Eclectic.	5
Other (Specify)______________________________	6
Don't know.	7

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6. In the course of reading instruction during the year, how much time does your class spend in each of the following activities? (Circle one number for each activity) 51-55

	Considerable Amount	Moderate Amount	Some, not much	Little or none
Phonic Drill	1	2	3	4
Whole Word Drill	1	2	3	4
Silent Reading	1	2	3	4
Reading Aloud	1	2	3	4
Writing	1	2	3	4

7. With respect to structure, how would you characterize the method by which you teach reading? (Circle one number) 56

Highly structured 1
Moderately structured 2
Basically unstructured. 3

8. How many students in your present class do you think need extra/remedial reading instruction? __________ 57, 58

9. On a scale from 1 to 5, with 1 being very useful, rate each of the following as to its usefulness in helping BELOW AVERAGE READERS in grades 2 and 3. (Circle one number for each listing) 59-62

	Very Useful				Not at all Useful	Don't Know
Educational TV when viewed during the class day. . .	1	2	3	4	5	6
Educational TV when viewed at home	1	2	3	4	5	6
Phonics approach to reading	1	2	3	4	5	6
Linguistic approach to reading	1	2	3	4	5	6

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10. On a scale from 1 to 5, with 1 being very useful, rate each of the following as to its usefulness in helping ABOVE AVERAGE READERS to read. (Circle one number for each listing) 63-66

	Very Useful				Not at all Useful	Don't Know
Educational TV when viewed during the class day. . .	1	2	3	4	5	6
Educational TV when viewed at home	1	2	3	4	5	6
Phonics approach to reading	1	2	3	4	5	6
Linguistic approach to reading	1	2	3	4	5	6

Do you agree or disagree with the following statements about the children in your class?

11. With proper instruction, most of the children in my class can learn to read well. (Circle one number) 67

Agree strongly.	1
Agree somewhat.	2
Don't know.	3
Disagree somewhat	4
Disagree strongly	5

12. No matter how good the reading instruction the pupils in my class receive, most of them will score low on reading tests. (Circle one number) 68

Agree strongly.	1
Agree somewhat.	2
Don't know.	3
Disagree somewhat	4
Disagree strongly	5

13. Most of the children in my class do not want to learn how to read. (Circle one number) 69

Agree strongly.	1
Agree somewhat.	2
Don't know.	3
Disagree somewhat	4
Disagree strongly	5

For ETS
Use Only

14. Is there a television available for your class to use? 70

Yes.	1
No	2

15. How much time does your class usually spend watching TV programs each week? (Include time spent watching The Electric Company, if appropriate.) (Circle one number) 71

None	1
Less than one hour a week.	2
Between one and three hours a week . . .	3
Between three and four hours a week. . .	4
Between five and seven hours a week. . .	5
More than seven hours a week	6

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PART II. (for experimental teachers only--those whose classes viewed The Electric Company)

16. During the last five school days, how many times did your class view The Electric Company? (Circle one number) 72

None	0
Once	1
Twice	2
Three times	3
Four times	4
Five times	5

17. On the average, since the show began, about how many times a week has your class viewed The Electric Company? (Circle one number) 73

Once a week or less	1
Twice a week	2
Three times a week	3
Four times a week	4
Five times a week	5

18. On the average, since the show began, about how many children present in your class on a particular day view The Electric Company when it is shown? (Circle one number) 74

Less than one quarter	1
About one quarter	2
About one-half	3
About three-fourths	4
All or almost all	5

19. On the average, since the show began, about how much of each show does your class watch when it is shown? (Circle one number) 75

Less than ten minutes	1
Ten to twenty minutes	2
Twenty to twenty-five minutes	3
All	4

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20. Are there any children in your class who, on a regular basis, do not watch The Electric Company when it is shown? (Circle one number) 76

Yes. 1

No 2

21. If yes, please name the child or children and briefly explain why he or she does not watch the show. 77-110

Child's Name	ID#	Reason

22. On the days your class views The Electric Company, approximately 30 minutes of the class day is used that otherwise would be available for other kinds of classroom activities. Over the course of the year, which of the following classroom activities has time been taken from in order to make room for The Electric Company viewing? Please estimate the percentage of time taken from each classroom activity. 111-131

Regular reading instruction. . . . . ____%

Other language arts. . . . . ____%

Other academic subjects (e.g., science, math, social studies). . . . . ____%

Physical education . . . . ____%

Rest period or lunch . . . . ____%

Art or music . . . . ____%

Other (specify)____________________________ ____%

Total: 100%

For ETS Use Only

23. How useful has The Electric Company been for children in your class who have reading difficulties? Rate the show's usefulness (on a scale from 1 to 5) with respect to each of the following: (Circle one number for each listing.) 132-136

	Very Useful				Not at all Useful
a. Teaching phonetic skills	1	2	3	4	5
b. Reviewing phonetic skills	1	2	3	4	5
c. Teaching comprehension	1	2	3	4	5
d. Motivating children to want to read	1	2	3	4	5
e. Instilling positive attitudes to reading	1	2	3	4	5

24. How useful has The Electric Company been in teaching children in your class each of the following skills? (Circle one in each listing.) 137-144

	Very Useful				Not at all Useful
a. Processing linear combinations	1	2	3	4	5
b. Processing letter groups as units	1	2	3	4	5
c. Sight words	1	2	3	4	5
d. Scanning for structure	1	2	3	4	5
e. Processing morphemes as units	1	2	3	4	5
f. Syntax	1	2	3	4	5
g. Punctuation	1	2	3	4	5
y. Context clues	1	2	3	4	5

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Use Only

25. Please rate the following aspects of The Electric Company based upon your experiences with your class. Circle one number as to the appropriateness of each for most of the children in your class. 145-149

	Very Appropriate				Not at all Appropriate
a. Vocabulary level used	1	2	3	4	5
b. Pace of material presented	1	2	3	4	5
c. Methods used to present material	1	2	3	4	5
d. Subject matter	1	2	3	4	5
e. Attention-holding ability	1	2	3	4	5

26. Would you like to use The Electric Company in your class next year? (Circle one number) 150

Yes, every day. 1
Yes, 3-4 times a week 2
Yes, 1-2 times a week 3
No. 4

27. What do you usually do when The Electric Company is being viewed by your class? (Circle the things you usually did) 151-162

I watch the show and speak to the class about it. 1
I watch the show but don't say anything 2
I work on something else alone. 3
I work with individual children 4
I work with small groups of children. 5
I am not in the classroom 6

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28. Do you have any comments about your experiences this year with The Electric Company that would be useful for the planners of the show?

____

____

____

____

____

29. Have you usually received a copy of The Electric Company guide? (Circle one number) 163

Yes. 1
No 2

30. How frequently do you refer to The Electric Company guide? (Circle one number) 164

Almost every day. 1
Several times a week. 2
Almost once a week. 3
Less than once a week 4
Never 5

31. How often do you use ideas suggested in The Electric Company guide? (Circle one number) 165

Almost every day. 1
Several times a week. 2
Almost once a week. 3
Less than once a week 4
Never 5

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Use Only

32. How useful has The Electric Company guide been in preparing your class for the show and/or in reviewing the show with your class? (Circle one number) 166

Very useful.	1
Somewhat useful.	2
Not very useful.	3
I never use the guide.	4

33. Do you have any suggestions for improving The Electric Company guide?

APPENDIX G

OBSERVATION FORM

FOR ETS USE ONLY

1 2 3 4

☐ ☐ ☐☐

City Grade Class

Date________________

OBSERVATION OF THE ELECTRIC COMPANY

Observe each class for 1 hour. Observe the 15 minutes before the show begins, 30 minutes during the show, and 15 minutes after the show ends.

A. 15 Minutes before The Electric Company

1. Did the teacher refer to the show at any time? 5

Yes.	1
No	2

2. If yes, how was the show referred to? (Circle as many as apply) 6-12

Review of what's to be on show.	1
Reference to Electric Company Guide . . .	2
Use of games or puzzles in The Electric Company Guide	3
Discussion of characters or parts of show.	4
Other (Specify)________________	5
________________________	6
________________________	7

3. How many minutes (of the 15 observed) did teacher spend referring to the show? _______ 13,14

B. 30 Minutes of The Electric Company

4. How many children are present in the class today who can watch the show? _____ 15,16

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5. Once every 2 minutes (15 times) write the number of children in the class who are not watching the show because:

   a. Child was called out of room or asked to do something by teacher (that is child not watching because of something beyond his or her control); or

   b. Child was inattentive to show (for example, was reading, playing, talking, daydreaming, staring out window).

Minute	# not watching (beyond control)	# Inattentive	
2	________	________	17-20
4	________	________	21-24
6	________	________	25-28
8	________	________	29-32
10	________	________	33-36
12	________	________	37-40
14	________	________	41-44
16	________	________	45-47
18	________	________	48-52
20	________	________	53-56
22	________	________	57-60
24	________	________	61-64
26	________	________	65-68
28	________	________	69-72
30	________	________	73-76

At the end of 30 minutes, make the following ratings on a scale from 1 to 5.

6. How was the TV reception?
Excellent 1 2 3 4 5 Very Poor 77

7. How was the TV audio--was set loud enough?
Excellent 1 2 3 4 5 Very Poor 78

In the classroom, how much noise unrelated to show occurred?

8. Children Noisy throughout show 1 2 3 4 5 Very quiet throughout show 79

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9. How often did children sing along with songs on show? 80

Frequently. 1
Sometimes 2
Rarely. 3
Never 4
No songs to sing. 5

10. How often did children read aloud words and sentences on show? 81

Frequently. 1
Sometimes 2
Rarely. 3
Never 4

11. What was the teacher doing for most of the time the show was on? (Circle one) 82

Teacher was not in room 1
Teacher worked on something else. 2
Teacher watched show but didn't say anything. 3
Teacher watched show and spoke about it during show 4

C. 15 Minutes after The Electric Company

12. Did teacher refer to show after it was over? 83

Yes. 1
No 2

13. If yes, how was show referred to? (Circle all that apply) 84-90

Review of what was on show. 1
Reference to The Electric Company Guide . . 2
Use of games or puzzles in The Electric Company Guide 3
Discussion of characters or parts of the show. 4
Other (Specify)____________________________ 5
____ 6
____ 7

14. How many minutes (of the 15 observed) did teacher spend referring to the show or what was taught? ________ 91,92

15. Are there any pictures, charts, or displays in the classroom that refer to The Electric Company or its curriculum? 93,94

Yes. 1
No 2

16. List any children who did not see most or all of the show because they were not in the room or something happened beyond their control.

Name	ID

17. List any children who did not see most or all of the show because they were inattentive to it.

Name	ID

D. Overall Feelings

18. Did the teacher say anything about the show that was critical--or that might make the children dislike it or not want to watch it?

Yes. 1
No 2

If yes, what was said? ______________________________

19. Did the teacher say anything about the show that was positive--that might make the children want to watch it?

Yes. 1
No 2

If yes, what was said? ______________________________

____

____

____

20. Other comments: Did anything happen during your observation that you feel captures the mood in the classroom--or that affected the classroom during the show?

____

____

____

____

____

____

APPENDIX H

CONTENT ANALYSIS

THE ELECTRIC COMPANY - YEAR 2

Goals Observed

I. General Principles

01 Attitude toward written code stressing its reasonableness and reliability
02 Left-right sequencing corresponds to sequence of speech
03 Written symbols stand for sound
04 Need to have strategies to help understand symbol-to-sound relationship

IIA. Processes: Blending (combining)

07 Chaining model (adding only one sound at a time)
m+a = ma, ma+n = man
08 Simple blending c+a+n = can
09 Word family m+an = man, c+an = can
10 Other blending models (consonant blends, blending syllables, rebuses)
11 Blending words into sentences

IIB. Processes: Scanning (overview of entire word or sentence)

13 Final e = long vowel
14 Double consonants (supper vs super = short vowel)
15 Utilizing context:
  16 Scrambled sentences
  17 Fill in the blank (cloze procedure)
  18 Guessing probable meaning of a word by using other words in the sentence
19 Punctuation

III. Processing Letter Groups as Chunks

21 Consonants
22 Consonant blends
23 Vowels
24 Vowel combinations
25 Consonant digraphs (ch, ph, sh, th, wh)
26 Controlled vowels (ar, er, ir, ur, or)
27 Larger spelling patterns (all, alk, ight, ing, tion)
28 Sight words: phonetic (any word taught non-analytically)
29 Sight words: cannot be decoded phonetically
30 Morphemes (ed, er, est, ing, ly, n't, s, 's, un)

IV. Others

31 Open syllable = long vowel (he, no)
32 Syntax (grammar)
33 Comprehension only (where no other word is used)
34 Attitude to reading or books
35 Attitude to school
36 Different educational goal in reading
37 Different goal (not reading)
38 Limbo
39 Spelling

Techniques Observed

Each 30-second notation of television technique used was a two-digit number. The first digit was used to designate the type of presentation:

0 live (on the set) presentation
1 film
2 song on set
3 film with song
4 words, drawings, photographs
5 words with song

The second digit was used to designate the characters involved in the presentation:

1 people
2 puppets
3 animals
4 animation
5 people and puppets

Date of Show ____________________

Show Number ____________________

In the top half of each square, a number was recorded indicating the objective and in the bottom half the number indicating the technique being used at that time. This was done every 30 seconds.

half minutes 5 minute intervals	00	01	02	03	04	05	06	07	08	09
1st 5 mins.										
2nd 5 mins.										
3rd 5 mins.										
4th 5 mins.										
5th 5 mins.										
6th 5 mins.										
7th 5 mins.										
8th 5 mins.										
9th 5 mins.										
0th 5 mins.										
1th 5 mins.										
2th 5 mins.										

APPENDIX I

TABLES

TABLES

APPENDIX I

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2 Intercorrelations of Pretest, Year 2 (Below the Diagonal) and Posttest, Year 2 (Above the Diagonal) Scores of Fresno Classes in Grades 2 and 3

3 Intercorrelations of Pretest, Year 2 (Below the Diagonal) and Posttest, Year 2 (Above the Diagonal) Scores of Youngstown Classes in Grades 2 and 3

4 The Percent of Time Each Goal was Observed in The Electric Company, Year 2 (130 shows)

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6 Treatment Composition of The Electric Company (in Percentages Reported by Goal Areas)

7 Descriptive Categorization, by Site, of Second Grade Children in Year 2

8 Descriptive Categorization, by Site, of Third Grade Children in Year 2

9 Descriptive Categorization, by Site, of Second Grade Children Grouped by Year 2 Viewing Status

10 Descriptive Categorization, by Site, of Third Grade Children Grouped by Year 2 Viewing Status

11 Descriptive Categorization, by Site, of First-Second Grade Follow-up Children Grouped by Treatments in Year 1 and Year 2

12 Descriptive Categorization, by Site, of Second-Third Grade Follow-up Children Grouped by Treatments in Year 1 and Year 2

13 Descriptive Categorization, by Site, of New Second Grade Children Grouped by Treatment

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15 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

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26	Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno and Youngstown (by Treatment Group)
27	Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)
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30 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)

31 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

32 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

33 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

34 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

35 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

36 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

37 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

38 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

39 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

40 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

41 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

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43 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

44 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

45 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

46 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

47 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno

48 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Target Follow-up Children in Youngstown

49 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno

50 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Target Follow-up Children in Youngstown

51 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno

52 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Target Follow-up Children in Youngstown

53 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno

54 Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Youngstown

55 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno

56 Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Youngstown

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57 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno

58 Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Non-target Follow-up Children in Youngstown

59 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno

60 Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Non-target Follow-up Children in Youngstown

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77 Pretest and Posttest Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Youngstown, Grade 2 (in the second year of the first-second grade study)

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85 Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Posttest CE Teacher Questionnaire Scales and Indices in Fresno, Grade 2 (N=11)

86 Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Posttest CE Teacher Questionnaire Scales and Indices in Youngstown, Grade 2 (N=11)

87 Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Posttest CE Teacher Questionnaire Scales and Indices in Fresno, Grade 3 (N=10)

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TABLE I-1

Subscore Reliabilities at Pretest, Year 2 for Electric Battery Grand Total, Subtotals and Metropolitan (Cronbach alpha)

Test and Subtest	Number of Items	Grade 2 Fresno	Grade 2 Youngstown	Grade 3 Fresno	Grade 3 Youngstown
GRAND TOTAL	115	.96	.96	.96	.96
Blending	28	.86	.86	.81	.80
Chunking	28	.89	.88	.90	.88
Scanning	14	.75	.74	.77	.76
Reading for Meaning	45	.93	.93	.93	.92
METROPOLITAN	35/40	.92	.92	.94	.93

TABLE I-2

Intercorrelations of Pretest, Year 2 (Below the Diagonal) and Posttest, Year 2 (Above the Diagonal) Scores of Fresno Classes in Grades 2 and 3

Grade 2

	1. Blending	2. Chunking	3. Scanning	4. Reading for Meaning	5. Grand Total	6. Attitude to School	7. Reading Preference	8. Metropolitan
1.		.78	.69	.81	.86	.13	-.03	.63
2.	.75		.83	.87	.95	.13	-.02	.83
3.	.67	.82		.79	.88	.11	-.01	.74
4.	.79	.86	.78		.97	.14	-.04	.80
5.	.86	.94	.86	.97		.14	-.03	.83
6.	.18	.20	.21	.21	.22		.01	.13
7.	-.06	-.03	-.04	-.01	-.03	.03		.04
8.	.78	.81	.74	.88	.89	.17	-.04	

Grade 3

	1.	2.	3.	4.	5.	6.	7.	8.
1.		.72	.64	.74	.81	.04	.04	.44
2.	.75		.80	.86	.95	.06	.04	.69
3.	.66	.82		.75	.86	.06	.06	.66
4.	.79	.87	.78		.96	.08	.05	.63
5.	.84	.95	.87	.97		.07	.05	.68
6.	.04	.04	.04	.08	.06		.10	.09
7.	.02	.02	.00	.04	.03	.02		.09
8.	.68	.86	.77	.83	.87	.08	.04	

TABLE I-3

Intercorrelations of Pretest, Year 2 (Below the Diagonal) and Posttest, Year 2 (Above the Diagonal) Scores of Youngstown Classes in Grades 2 and 3

Grade 2

	1. Blending	2. Chunking	3. Scanning	4. Reading for Meaning	5. Grand Total	6. Attitude to School	7. Reading Preference	8. Metropolitan
1.		.77	.69	.76	.85	.19	.02	.70
2.	.77		.83	.86	.95	.19	.04	.86
3.	.72	.81		.78	.87	.14	.06	.78
4.	.83	.88	.78		.96	.21	.06	.86
5.	.89	.94	.86	.97		.20	.05	.88
6.	.19	.19	.14	.21	.21		.07	.23
7.	-.01	.03	.02	.04	.03	.05		.08
8.	.83	.82	.73	.89	.90	.21	.04	

Grade 3

	1.	2.	3.	4.	5.	6.	7.	8.
1.		.72	.65	.78	.84	.11	.03	.52
2.	.75		.79	.82	.93	.09	.05	.72
3.	.69	.82		.72	.86	.10	.01	.71
4.	.77	.84	.75		.95	.10	.03	.68
5.	.85	.94	.86	.96		.11	.04	.74
6.	.17	.15	.14	.20	.19		.09	.10
7.	.02	.02	.02	.03	.03	.02		.06
8.	.68	.84	.76	.83	.86	.18	.01	

TABLE I-4

The Percent of Time Each Goal was Observed in The Electric Company, Year 2 (130 shows)

Goal	Number of Times Goal Observed	Percent of Time Goal Observed	Total for Combined Goals (in percent)
I. General Principles			1.9%
Attitude toward written code stressing reasonableness	22	0.5 %	
Written symbols stand for sound	2	0.0	
Set of strategies facilitates reading	63	1.4	
IIA. Processes: Blending (combining)			13.9%
Chaining model	31	0.7	
Simple blending	50	1.1	
Word family	99	2.2	
Other blending models	24	0.5	
Blending words into sentences	426	9.4	
IIB. Processes: Scanning			14.8%
Final e = long vowel	209	4.6	
Double consonants	52	1.2	
Utilizing context:	4	0.1	
Scrambled sentences	51	1.1	
Fill in the blank	34	0.8	
Guessing probable meaning	104	2.3	
Punctuation	211	4.7	
III. Processing Letter Groups as Chunks			61.2%
Consonants	561	12.4	
Consonant blends	383	8.5	
Vowels	48	1.1	
Vowel combinations	513	11.4	
Consonant digraphs	222	4.9	
Controlled vowels	75	1.7	
Larger spelling patterns	121	2.7	
Sight words: phonetic	346	7.7	
Sight words: cannot be decoded	246	5.4	
Morphemes	243	5.4	
IV. Others			8.3%
Open syllable = long vowel	2	0.0	
Syntax (grammar)	40	0.9	
Comprehension only	3	0.1	
Attitude to reading	206	4.6	
Different educational goal in reading	7	0.2	
Different goal (not reading)	5	0.1	
Limbo	57	1.3	
Spelling	48	1.1	
Total	4508	100%	100%

TABLE I-5

Goal Composition of *The Electric Company*, Year 2
(in Percentages Reported by Goal Areas)

Goals[1]	Treatments[2]						
	People on Set	Puppets and People on Set	Animation	Film	Song on Set	Film and Song	Photograph or Drawing
Set of strategies	23.8		31.7	42.8			
Simple blending	54.0			8.0			26.0
Word family	26.3		17.2	7.1	21.2		28.3
Blending	29.6		13.4	6.3	5.2		42.2
Final e	39.2				17.2		35.9
Double consonants	40.4			17.3	5.7		30.8
Scrambled sentences	49.0	23.5					27.4
Guessing probable meaning	69.2						26.9
Punctuation	45.0				8.5		38.4
Consonants	33.5		5.5		15.7		39.2
Consonant blends	37.8		6.8		21.4		28.2
Vowels	35.4				8.3		
Vowel combinations	37.8		6.2	6.2	20.1		26.9
Consonant digraphs	28.4		9.4	7.6	22.1		29.7
Controlled vowels	34.7			8.0	9.3		42.7
Larger spelling patterns	32.2			10.7	19.8		24.8
Sight words: phonetic	22.0		12.1	5.5	19.1		35.0
Sight words: cannot be decoded	34.6			10.6	14.6	6.1	29.3
Morphemes	29.2		7.8	7.4	23.4		29.2
Attitude to reading	23.3		11.2	21.8	9.7		29.1
Limbo				43.8			
Spelling	14.6				20.8		60.4

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[1] Only goals treated more than 1% of the total time are included.

[2] Only treatments which comprised more than 5% of each goal are included.

TABLE I-6

Treatment Composition of The Electric Company (in Percentages Reported by Goal Areas)

Goals[1]	Treatments[1]					
	People on Set (34.4% of total time)	People and Puppets on Set (1.9% of total time)	Animation (7.6% of total time)	Film (7.6% of total time)	Song on Set (14.6% of total time)	Photograph or Drawing (31.7% of total time)
Attitude toward written code stressing reasonableness			1.2			
Set of strategies facilitates reading	1.0	1.2	5.9	7.9		
Chaining model	1.3	2.4				
Simple blending	1.7	1.2		1.2		
Word family	1.7		5.0	2.1	3.2	2.0
Other blending models			1.2	1.2		
Blending words into sentences	8.1	6.0	16.7	7.9	3.3	12.6
Final e	5.3	1.2	2.6	1.8	5.5	5.2
Double consonants	1.4	1.2		2.6		1.1
Scrambled sentences	1.6	14.3				1.0
Fill in the blank	1.4					
Guessing probable meaning	4.6	1.2				2.0
Punctuation	6.1	6.0	1.2	2.1	2.7	5.7
Consonants	12.1	7.1	9.1	7.6	13.4	15.4
Consonant blends	9.3	7.1	7.6	4.1	12.5	7.6
Vowels	1.1	1.2				1.5
Vowel combinations	12.5	8.3	9.4	9.4	15.7	9.7
Consonant digraphs	4.1	7.1	6.2	5.0	7.4	4.6
Controlled vowels	1.7	2.4		1.8	1.1	2.2
Larger spelling patterns	2.5	3.6	1.8	3.8	3.6	2.1
Sight words: phonetic	4.9	7.1	12.3	5.6	10.0	8.5
Sight words: cannot be decoded	5.5		2.3	7.6	5.5	5.0
Morphemes	4.6	8.3	5.6	5.3	8.7	5.0
Syntax	1.4	6.0				
Attitude to reading	3.1	3.6	6.7	13.2	3.0	4.2
Different educational goals in reading		2.4				
Different goal (not reading)		1.2				
Limbo				7.3		
Spelling					1.5	2.0

[1] Goals and treatments presented less than 1% of total time are not included.

TABLE I-7

Descriptive Categorization, by Site, of Second Grade Children in Year 2

	Fresno N=529		Youngstown N=531	
	Frequency	Percent	Frequency	Percent
Sex:				
Female	257	48.6	254	47.8
Male	272	51.4	277	52.2
Population Group:				
Black	2	0.4	199	37.5
White	267	50.5	295	55.6
Spanish	251	47.4	30	5.6
Other	9	1.7	7	1.3
Language:				
English	289	54.6	498	93.8
Spanish	17	3.2	0	0.0
English and Spanish	219	41.4	25	4.7
Other	4	0.8	8	1.5
Year 1 Viewing:				
Viewed	301	56.9	249	46.9
Didn't view	223	42.2	276	52.0
Don't know	5	1.0	6	1.1
Age in Months at Pretest Year 2:				
81-83	17	3.2	2	0.4
84-86	91	17.2	98	18.5
87-89	99	18.7	114	21.5
90-92	88	16.6	100	18.8
93-95	78	14.7	114	21.5
96-98	60	11.3	51	9.6
99-101	41	7.8	20	3.8
102-104	24	4.5	7	1.3
105-107	15	2.8	10	1.9
108-110	4	0.8	8	1.5
111-113	5	1.0	1	0.2
114-116	1	0.2	1	0.2
117-119	1	0.2	0	0.0
120-122	2	0.4	0	0.0
123-125	1	0.2	0	0.0
126-128	0	0.0	0	0.0
129-131	0	0.0	0	0.0
132-134	0	0.0	0	0.0
135-137	0	0.0	0	0.0
138-140	0	0.0	0	0.0
Unknown	2	0.4	5	0.9
Number of Schools	9	---	10	---
Number of Classes	25	---	24	---

TABLE I-8

Descriptive Categorization, by Site, of Third Grade Children in Year 2

	Fresno N=598		Youngstown N=1119	
	Frequency	Percent	Frequency	Percent
Sex:				
Female	296	49.5	544	48.6
Male	302	50.5	575	51.4
Population Group:				
Black	2	0.3	536	47.9
White	271	45.3	530	47.4
Spanish	313	52.3	44	3.9
Other	12	2.0	9	0.8
Language:				
English	302	50.5	1064	95.1
Spanish	13	2.2	0	0.0
English and Spanish	275	46.0	38	3.4
Other	8	1.3	17	1.5
Year 1 Viewing:				
Viewed	352	58.9	577	51.6
Didn't View	234	39.1	525	46.9
Don't know	12	2.0	17	1.5
Age in Months at Pretest Year 2:				
81-83	0	0.0	1	0.1
84-86	0	0.0	1	0.1
87-89	0	0.0	1	0.1
90-92	0	0.0	0	0.0
93-95	32	5.4	15	1.3
96-98	98	16.4	160	14.3
99-101	98	16.4	201	18.0
102-104	108	18.1	224	20.0
105-107	93	15.6	212	19.0
108-110	59	9.9	102	9.1
111-113	50	8.4	77	6.9
114-116	26	4.4	53	4.7
117-119	21	3.5	49	4.4
120-122	6	1.0	6	0.5
123-125	3	0.5	4	0.4
126-128	1	0.2	1	0.1
129-131	1	0.2	1	0.1
132-134	0	0.0	1	0.1
135-137	1	0.2	0	0.0
138-140	0	0.0	0	0.0
Unknown	1	0.2	10	0.9
Number of Schools	11	---	19	---
Number of Classes	31	---	46	---

TABLE I-9

Descriptive Categorization, by Site, of Second Grade Children Grouped by Year 2 Viewing Status

	FRESNO				YOUNGSTOWN			
	Experimental N=247		Control N=282		Experimental N=283		Control N=248	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sex:								
Female	120	48.6	137	48.6	133	47.0	121	48.8
Male	127	51.4	145	51.4	150	53.0	127	51.2
Population Group:								
Black	1	0.4	1	0.4	107	37.8	92	37.1
White	117	47.4	150	53.2	153	54.1	142	57.3
Spanish	125	50.6	126	44.7	20	7.1	10	4.0
Other	4	1.6	5	1.8	3	1.1	4	1.6
Language:								
English	127	51.4	162	57.4	262	92.6	236	95.2
Spanish	12	4.9	5	1.8	0	0.0	0	0.0
English and Spanish	105	42.5	114	40.4	16	5.6	9	3.6
Other	3	1.2	1	0.4	5	1.8	3	1.2
Year 1 Viewing:								
Viewed	140	56.7	161	57.1	138	43.8	111	44.8
Didn't View	105	42.5	118	41.8	142	50.2	134	54.0
Don't know	2	0.8	3	1.1	3	1.1	3	1.2
Age in Months at Pretest Year 2:								
81-83	8	3.2	9	3.2	1	0.4	1	0.4
84-86	40	16.2	51	18.1	50	17.7	48	19.4
87-89	46	18.6	53	18.8	61	21.6	53	21.4
90-92	41	16.6	47	16.7	53	18.7	47	19.0
93-95	38	15.4	40	14.2	56	19.8	58	23.4
96-98	28	11.3	32	11.4	30	10.6	21	8.5
99-101	22	8.9	19	6.7	12	4.2	8	3.2
102-104	9	3.6	15	5.3	2	0.7	5	2.0
105-107	5	2.0	10	3.6	6	2.1	4	1.6
108-110	3	1.2	1	0.4	5	1.8	3	1.2
111-113	1	0.4	4	1.4	1	0.4	0	0.0
114-116	1	0.4	0	0.0	1	0.4	0	0.0
117-119	0	0.0	1	0.4	0	0.0	0	0.0
120-122	2	0.8	0	0.0	0	0.0	0	0.0
123-125	1	0.4	0	0.0	0	0.0	0	0.0
126-128	0	0.0	0	0.0	0	0.0	0	0.0
129-131	0	0.0	0	0.0	0	0.0	0	0.0
132-134	0	0.0	0	0.0	0	0.0	0	0.0
135-137	0	0.0	0	0.0	0	0.0	0	0.0
138-140	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	2	0.8	0	0.0	5	1.8	0	0.0
Number of Schools	9 schools				10 schools			
Number of Classes	12		13		13		11	

TABLE I-10

Descriptive Categorization, by Site, of Third Grade Children Grouped by Year 2 Viewing Status

	FRESNO				YOUNGSTOWN			
	Experimental N=292		Control N=306		Experimental N=554		Control N=565	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sex:								
Female	148	50.1	148	48.4	282	50.9	262	46.4
Male	144	49.3	158	51.6	272	49.1	303	53.6
Population Group:								
Black	2	0.7	0	0.0	267	48.2	269	47.6
White	131	44.9	140	45.8	261	47.1	269	47.6
Spanish	154	52.7	159	52.0	22	4.0	22	3.9
Other	5	1.7	7	2.3	4	0.7	5	0.9
Language:								
English	149	51.0	153	50.0	525	94.8	539	95.4
Spanish	5	1.7	8	2.6	0	0.0	0	0.0
English and Spanish	135	46.2	140	45.8	20	3.6	18	3.2
Other	3	1.0	5	1.6	9	1.6	8	1.4
Year 1 Viewing:								
Viewed	185	63.4	167	54.6	311	56.1	266	47.1
Didn't View	107	36.6	127	41.5	237	42.8	288	51.0
Don't know	0	0.0	12	3.9	6	1.1	11	2.0
Age in Months at Pretest Year 2:								
81-83	0	0.0	0	0.0	1	0.2	0	0.0
84-86	0	0.0	0	0.0	0	0.0	1	0.2
87-89	0	0.0	0	0.0	0	0.0	1	0.2
90-92	0	0.0	0	0.0	0	0.0	0	0.0
93-95	16	5.5	16	5.2	9	1.6	6	1.1
96-98	55	18.8	43	14.0	70	12.6	90	15.9
99-101	42	14.4	56	18.3	95	17.2	106	18.8
102-104	60	20.6	48	15.7	120	21.7	104	18.4
105-107	40	13.7	53	17.3	116	20.9	96	17.0
108-110	26	8.9	33	10.8	51	9.2	51	9.0
111-113	24	8.2	26	8.5	40	7.2	37	6.6
114-116	12	4.1	14	4.6	21	3.8	32	5.7
117-119	11	3.8	10	3.3	23	4.2	26	4.6
120-122	3	1.0	3	1.0	0	0.0	6	1.1
123-125	2	0.7	1	0.3	3	0.5	1	0.2
126-128	0	0.0	1	0.3	1	0.2	0	0.0
129-131	0	0.0	1	0.3	0	0.0	1	0.2
132-134	0	0.0	0	0.0	0	0.0	1	0.2
135-137	1	0.3	0	0.0	0	0.0	0	0.0
138-140	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	1	0.3	4	0.7	6	1.1
Number of Schools	11 schools				19 schools			
Number of Classes	15		16		23		23	

TABLE I-11

Descriptive Categorization, by Site, of First-Second Grade Follow-up Children Grouped by Treatments in Year I and Year 2

	FRESNO								YOUNGSTOWN							
	(Year 1 E) (Year 2 E) N=66		(Year 1 E) (Year 2 C) N=66		(Year 1 C) (Year 2 E) N=67		(Year 1 C) (Year 2 C) N=75		(Year 1 E) (Year 2 E) N=102		(Year 1 E) (Year 2 C) N=88		(Year 1 C) (Year 2 E) N=87		(Year 1 C) (Year 2 C) N=79	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Sex:																
Female	31	47.0	35	53.0	42	62.7	35	46.7	49	48.0	45	51.1	37	42.5	41	51.9
Male	35	53.0	31	47.0	25	37.3	40	53.3	53	52.0	43	48.9	50	57.5	38	48.1
Population Group:																
Black	1	1.5	0	0.0	0	0.0	0	0.0	26	25.5	33	37.5	36	41.4	20	25.3
White	28	42.4	34	51.5	31	46.3	43	57.3	70	68.6	54	61.4	43	49.4	52	65.8
Spanish	36	54.6	32	48.5	35	52.2	31	41.3	6	5.9	1	1.1	6	6.9	4	5.1
Other	1	1.5	0	0.0	1	1.5	1	1.3	0	0.0	0	0.0	2	2.3	3	3.8
Language:																
English	35	53.0	36	54.6	35	52.2	46	61.3	98	96.1	87	98.9	79	90.8	75	94.9
Spanish	6	9.1	1	1.5	4	6.0	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0
English & Spanish	25	37.9	29	43.9	27	40.3	27	36.0	4	3.9	1	1.1	6	6.9	3	3.8
Other	0	0.0	0	0.0	1	1.5	1	1.3	0	0.0	0	0.0	2	2.3	1	1.3
Age in Months at Pretest Year 2:																
81-83	1	1.5	2	3.0	2	3.0	4	5.3	1	1.0	0	0.0	0	0.0	0	0.0
84-86	10	15.2	11	16.7	11	16.4	9	12.0	18	17.6	17	19.3	16	18.4	19	24.0
87-89	14	21.2	17	25.8	14	20.9	17	22.7	24	23.5	19	21.6	16	18.4	12	15.2
90-92	13	19.7	9	13.6	11	16.4	14	18.7	21	20.6	16	18.2	17	19.5	23	29.1
93-95	13	19.7	8	12.1	6	9.0	7	9.3	23	23.0	25	28.4	16	18.4	12	15.2
96-98	8	12.1	7	10.6	5	7.5	9	12.0	10	9.8	7	8.0	11	12.6	9	11.4
99-101	4	6.1	5	7.6	10	14.9	7	9.3	1	1.0	2	2.3	6	6.9	2	2.5
102-104	1	1.5	4	6.1	4	6.0	2	2.7	1	1.0	0	0.0	1	1.2	1	1.3
105-107	1	1.5	2	3.0	1	1.5	1	1.3	1	1.0	1	1.1	4	4.6	0	0.0
108-110	0	0.0	0	0.0	1	1.5	1	1.3	1	1.0	1	1.1	0	0.0	1	1.3
111-113	0	0.0	1	1.5	0	0.0	3	4.0	0	0.0	0	0.0	0	0.0	0	0.0
114-116	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0
117-119	0	0.0	0	0.0	0	0.0	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0
120-122	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
123-125	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
126-128	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
129-131	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
132-134	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
135-137	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
138-140	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	1	1.5	0	0.0	1	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

TABLE I-12

Descriptive Categorization, by Site, of Second-Third Grade Follow-up Children Grouped by Treatments in Year 1 and Year 2

	FRESNO								YOUNGSTOWN							
	(Year 1 E) (Year 2 E) N=102		(Year 1 E) (Year 2 C) N=56		(Year 1 E) (Year 2 E) N=74		(Year 1 C) (Year 2 C) N=98		(Year 1 E) (Year 2 E) N=219		(Year 1 E) (Year 2 C) N=182		(Year 1 C) (Year 2 E) N=198		(Year 1 C) (Year 2 C) N=214	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
Sex:																
Female	55	53.9	26	46.4	35	47.3	48	49.0	115	52.5	91	50.0	98	49.5	97	45.3
Male	47	46.1	30	53.6	39	52.7	50	51.0	104	47.5	91	50.0	100	50.5	117	54.7
Population Group:																
Black	1	1.0	0	0.0	1	1.3	0	0.0	85	38.8	95	52.2	111	56.1	74	34.6
White	44	43.1	30	53.6	29	39.2	34	34.7	132	60.3	82	45.0	76	38.4	131	61.2
Spanish	56	54.9	25	44.6	43	58.1	61	62.2	1	0.5	3	1.6	11	5.6	8	3.7
Other	1	1.0	1	1.8	1	1.3	3	3.1	1	0.5	2	1.1	0	0.0	1	0.5
Language:																
English	53	51.9	33	58.9	37	50.0	43	43.9	215	98.2	179	98.4	187	94.4	209	97.7
Spanish	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
English & Spanish	48	47.1	22	39.3	37	50.0	53	54.1	1	0.5	2	1.1	10	5.0	5	2.3
Other	0	0.0	1	1.8	0	0.0	2	2.0	3	1.4	1	0.6	1	0.5	0	0.0
Age in Months at Pretest Year 2:																
81–83	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
84–86	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
87–89	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
90–92	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
93–95	8	7.8	5	8.9	2	2.7	3	3.1	2	0.9	2	1.1	4	2.0	4	1.9
96–98	15	14.7	8	14.3	21	28.4	13	13.3	29	13.2	35	19.2	23	11.6	30	14.0
99–101	16	15.7	8	14.3	9	12.2	15	15.3	41	18.7	36	19.8	26	13.1	48	22.4
102–104	21	20.6	8	14.3	13	17.6	13	13.3	47	21.5	33	18.1	53	26.8	37	17.3
105–107	13	12.8	11	19.6	10	13.5	17	17.4	54	24.7	32	17.6	36	18.2	36	16.8
108–110	16	15.7	7	12.5	4	5.4	13	13.3	15	6.8	19	10.4	22	11.1	22	10.3
111–113	8	7.8	5	8.9	3	4.0	11	11.2	16	7.3	10	5.5	12	6.1	14	6.5
114–116	1	1.0	0	0.0	4	5.4	7	7.1	5	2.3	7	3.8	10	5.0	10	4.7
117–119	4	3.9	2	3.6	5	6.8	3	3.1	10	4.6	6	3.3	10	5.0	11	5.1
120–122	0	0.0	0	0.0	2	2.7	1	1.0	0	0.0	2	1.1	0	0.0	2	0.9
123–125	0	0.0	1	1.8	1	1.4	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0
126–128	0	0.0	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	1	0.5	0	0.0
129–131	0	0.0	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0
132–134	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
135–137	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
138–140	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	1	1.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

TABLE I-13

Descriptive Categorization, by Site, of New Second Grade Children Grouped by Treatment

	FRESNO				YOUNGSTOWN			
	Experimental N=114		Control N=141		Experimental N=94		Control N=81	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sex:								
Female	47	41.2	67	47.5	47	50.0	35	43.2
Male	67	58.8	74	52.5	47	50.0	46	56.8
Population Group:								
Black	0	0.0	1	0.7	45	47.9	39	48.2
White	58	50.9	73	51.8	40	42.6	36	44.4
Spanish	54	47.4	63	44.7	8	8.5	5	6.2
Other	2	1.8	4	2.8	1	1.1	1	1.2
Language:								
English	57	50.0	80	56.7	85	90.4	74	91.4
Spanish	2	1.8	3	2.1	0	0.0	0	0.0
English and Spanish	53	46.5	58	41.1	6	6.4	5	6.2
Other	2	1.8	0	0.0	3	3.2	2	2.5
Year 1 Viewing:								
Viewed	74	64.9	95	67.4	36	38.3	23	28.4
Didn't View	38	33.3	43	30.5	55	58.5	55	67.9
Don't know	2	1.8	3	2.1	3	3.2	3	3.7
Age in Months at Pretest Year 2:								
81-83	5	4.4	3	2.1	0	0.0	1	1.2
84-86	19	16.7	31	22.0	16	17.0	12	14.8
87-89	18	15.8	19	13.5	21	22.3	22	27.2
90-92	17	14.9	24	17.0	15	16.0	8	9.9
93-95	19	16.7	25	17.7	17	18.1	21	25.9
96-98	15	13.2	16	11.4	9	9.6	5	6.2
99-101	8	7.0	7	5.0	5	5.3	4	4.9
102-104	4	3.5	9	6.4	0	0.0	4	4.9
105-107	3	2.6	7	5.0	1	1.1	3	3.7
108-110	2	1.8	0	0.0	4	4.3	1	1.2
111-113	1	0.9	0	0.0	1	1.1	0	0.0
114-116	1	0.9	0	0.0	0	0.0	0	0.0
117-119	0	0.0	0	0.0	0	0.0	0	0.0
120-122	1	0.9	0	0.0	0	0.0	0	0.0
123-125	1	0.9	0	0.0	0	0.0	0	0.0
126-128	0	0.0	0	0.0	0	0.0	0	0.0
129-131	0	0.0	0	0.0	0	0.0	0	0.0
132-134	0	0.0	0	0.0	0	0.0	0	0.0
135-137	0	0.0	0	0.0	0	0.0	0	0.0
138-140	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	0	0.0	5	5.3	0	0.0

TABLE I-14

Descriptive Categorization, by Site, of New Third Grade Children Grouped by Treatment

	FRESNO				YOUNGSTOWN			
	N=116		N=152		N=137		N=169	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sex:								
Female	58	50.0	74	48.7	69	50.3	74	43.8
Male	58	50.0	78	51.3	68	49.6	95	56.2
Population Group:								
Black	0	0.0	0	0.0	71	51.8	100	59.2
White	58	50.0	76	50.0	53	38.7	56	33.1
Spanish	55	47.4	73	48.0	10	7.3	11	6.5
Other	3	2.6	3	2.0	3	2.2	2	1.2
Language:								
English	59	50.9	77	50.7	123	89.8	151	89.4
Spanish	4	3.4	8	5.3	0	0.0	0	0.0
English and Spanish	50	43.1	65	42.8	9	6.6	11	6.5
Other	3	2.6	2	1.3	5	3.6	7	4.2
Year 1 Viewing:								
Viewed	83	71.6	111	73.0	92	67.2	84	49.7
Didn't View	33	28.4	29	19.1	39	28.5	74	43.8
Don't know	0	0.0	12	7.9	6	4.4	11	6.5
Age in Months at Pretest Year 2:								
81-83	0	0.0	0	0.0	1	.7	0	0.0
84-86	0	0.0	0	0.0	0	0.0	1	0.6
87-89	0	0.0	0	0.0	0	0.0	1	0.6
90-92	0	0.0	0	0.0	0	0.0	0	0.0
93-95	6	5.2	8	5.3	3	2.2	0	0.0
96-98	19	16.4	22	14.5	18	13.1	25	14.8
99-101	17	14.7	33	21.7	28	20.4	22	13.0
102-104	26	22.4	27	17.8	20	14.6	34	20.1
105-107	17	14.7	25	16.4	26	19.0	28	16.6
108-110	6	5.2	13	8.6	14	10.2	10	5.9
111-113	13	11.2	10	6.6	12	8.8	13	7.7
114-116	7	6.0	7	4.6	6	4.4	15	8.9
117-119	2	1.7	5	3.3	3	2.2	9	5.3
120-122	1	0.9	2	1.3	0	0.0	2	1.2
123-125	1	0.9	0	0.0	2	1.5	1	0.6
126-128	0	0.0	0	0.0	0	0.0	0	0.0
129-131	0	0.0	0	0.0	0	0.0	1	0.6
132-134	0	0.0	0	0.0	0	0.0	1	0.6
135-137	1	0.9	0	0.0	0	0.0	0	0.0
138-140	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	0	0.0	0	0.0	4	2.9	6	3.6

TABLE I-15

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 132		Control N = 142		Experimental N = 190		Control N = 166	
		M	SD	M	SD	M	SD	M	SD
Matching	8	7.1	1.1	7.3	1.1	7.4	1.1	7.3	1.1
Consonants and Vowels	10	6.5	2.5	7.1	2.4	6.8	2.6	5.8	2.4
Consonant Blends & Digraphs	6	2.5	1.1	2.9	1.1	2.7	1.1	2.4	1.0
Grand Total	24	16.2	3.5	17.2	3.3	16.9	3.7	15.4	3.3
Attitude:									
Attitude to School	9	7.1	1.8	7.3	1.7	7.6	1.6	7.2	1.8
Reading Preference	4	2.2	1.2	2.1	1.1	2.1	1.2	2.1	1.1
Math Preference	4	1.7	1.0	1.6	1.1	1.6	1.0	1.6	1.1
Social Studies Preference	4	1.3	1.2	1.5	1.1	1.7	1.2	1.5	1.2
Art Preference	4	2.9	1.1	2.9	1.1	2.9	1.1	2.9	1.1
Spelling Preference	4	1.8	1.0	1.9	1.1	1.6	1.1	1.8	1.0
Metropolitan Achievement (raw scores)	39	23.1	8.3	25.6	7.5	24.9	7.3	21.4	6.9

TABLE I-16

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for First-Second Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 132		Control N = 142		Experimental N = 190		Control N = 166	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	11.9	1.3	11.4	1.7	12.0	1.5	10.8	2.1
Vowels	6	5.1	1.2	4.8	1.5	5.0	1.4	4.1	1.5
Consonant Blends	9	7.1	1.9	7.1	1.9	7.3	1.9	6.1	2.1
Blending Total	28	24.1	3.7	23.4	4.5	24.3	4.4	21.0	4.9
Vowel Combinations	9	5.1	2.2	4.8	2.2	5.1	1.9	3.8	1.8
Consonant Digraphs	6	3.8	1.8	3.2	1.9	4.1	1.8	2.5	1.6
Controlled Vowels	4	1.8	1.2	1.9	1.2	1.8	1.3	1.3	1.0
Larger Spelling Patterns	5	3.5	1.3	3.2	1.3	3.7	1.2	2.6	1.3
Sight Words	4	2.5	1.2	2.3	1.2	2.8	1.2	2.0	1.2
Chunking Total	28	16.7	6.1	15.3	6.2	17.6	6.1	12.3	4.9
Final e	6	3.3	1.8	2.9	1.9	3.5	1.8	2.2	1.4
Double Consonants	4	1.4	1.0	1.3	1.0	1.6	1.1	1.0	0.8
Open Syllables	4	2.8	1.2	2.7	1.2	2.6	1.3	2.0	1.2
Scanning Total	14	7.4	2.9	7.0	3.2	7.8	3.4	5.2	2.4
Morphemes	10	5.9	2.4	6.3	2.2	6.9	2.2	5.3	2.0
Linear Blending	6	3.9	1.5	3.4	1.6	4.3	1.5	3.3	1.6
Syntactic Units	7	4.2	2.1	4.3	2.0	5.5	1.8	4.0	1.9
Punctuation	5	1.9	1.2	1.7	1.1	2.6	1.4	1.6	1.1
Context (Total)	9	5.8	2.5	5.6	2.3	6.4	2.4	4.4	2.3
Context (Vocabulary)	4	2.4	1.4	2.3	1.2	2.8	1.3	1.8	1.3
Context (Sentences)	4	2.9	1.3	2.8	1.3	3.1	1.2	2.2	1.3
Sentence Questions	8	3.9	2.4	3.6	2.2	5.0	2.4	3.1	1.9
Reading for Meaning Total	45	25.5	9.8	24.9	8.9	30.6	9.7	21.7	7.8
Grand Total	115	73.8	20.9	70.6	20.8	80.3	21.9	60.1	17.8
Attitude:									
Attitude to School	9	7.7	1.6	7.6	1.5	8.3	1.1	7.6	1.8
Reading Preference	4	2.2	1.1	1.8	1.1	2.2	1.0	2.2	1.0
Math Preference	4	1.6	1.1	1.8	1.1	1.5	1.1	1.3	1.1
Social Studies Preference	4	1.7	1.3	1.9	1.3	1.6	1.2	1.6	1.1
Art Preference	4	2.9	1.2	2.9	1.3	3.0	1.1	3.1	1.1
Spelling Preference	4	1.6	1.1	1.6	1.0	1.6	1.0	1.7	1.0
Left-right Orientation	2	1.2	1.0	1.2	0.9	1.9	0.3	1.9	0.5
Scrambled Sentences	4	2.0	1.3	1.9	1.3	2.4	1.2	1.5	1.2
Individual Test Total	36	21.9	9.0	21.1	8.5	21.7	8.7	15.1	8.5
Metropolitan Achievement (raw scores)	35	23.9	7.4	23.7	7.7	26.0	7.9	19.4	7.2

TABLE I-17

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for First-Second Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

		FRESNO				YOUNGSTOWN			
		Experimental N = 132		Control N = 142		Experimental N = 190		Control N = 166	
Test and Subtest	No. of Items	M	SD	M	SD	M	SD	M	SD
Consonants	13	12.1	1.2	11.8	1.6	12.0	1.5	11.0	1.7
Vowels	6	5.1	1.3	5.1	1.3	5.2	1.3	4.5	1.5
Consonant Blends	9	7.4	1.9	7.5	1.9	7.2	2.0	6.0	2.2
Blending Total	28	24.6	3.9	24.4	4.1	24.4	4.3	21.5	4.8
Vowel Combinations	9	5.5	2.1	5.3	2.2	5.4	2.2	4.1	2.0
Consonant Digraphs	6	3.9	1.9	3.7	1.8	4.4	1.7	2.8	1.6
Controlled Vowels	4	2.1	1.2	2.0	1.3	2.1	1.3	1.4	1.1
Larger Spelling Patterns	5	3.5	1.5	3.4	1.5	3.8	1.3	3.0	1.3
Sight Words	4	2.7	1.2	2.6	1.2	3.0	1.1	2.3	1.1
Chunking Total	28	17.7	6.6	17.0	6.7	18.8	6.5	13.7	5.4
Final e	6	3.6	1.8	3.4	1.8	3.6	1.8	2.3	1.6
Double Consonants	4	1.6	1.0	1.5	0.9	1.5	1.0	1.2	0.9
Open Syllables	4	2.8	1.1	2.8	1.4	2.9	1.1	2.3	1.3
Scanning Total	14	8.0	3.1	7.6	3.3	8.0	3.2	5.8	2.8
Morphemes	10	6.7	2.3	6.4	2.3	7.2	2.2	5.8	2.2
Linear Blending	6	4.0	1.7	3.9	1.7	4.5	1.5	3.5	1.6
Syntactic Units	7	5.0	2.0	4.9	1.9	5.6	1.8	4.3	2.0
Punctuation	5	2.1	1.3	2.1	1.3	2.5	1.3	1.8	1.2
Context (Total)	9	6.3	2.5	6.2	2.3	6.7	2.3	5.0	2.5
Context (Vocabulary)	4	2.7	1.4	2.7	1.2	3.0	1.3	2.3	1.3
Context (Sentences)	4	3.1	1.2	3.0	1.2	3.3	1.1	2.4	1.3
Sentence Questions	8	4.6	2.7	4.5	2.6	5.3	2.6	3.8	2.3
Reading for Meaning Total	45	28.7	10.7	28.0	10.0	31.8	9.9	24.1	9.4
Grand Total	115	79.0	22.7	77.0	22.5	83.1	22.5	65.1	20.3
Attitude:									
Attitude to School	9	7.8	1.7	7.6	1.9	7.9	1.4	7.6	1.7
Reading Preference	4	2.0	1.1	1.9	1.0	1.9	1.0	1.9	1.0
Math Preference	4	1.6	1.1	1.7	1.1	1.6	1.1	1.5	1.1
Social Studies Preference	4	1.5	1.3	1.6	1.3	1.7	1.2	1.7	1.2
Art Preference	4	3.2	1.1	3.1	1.2	3.2	1.2	3.3	1.1
Spelling Preference	4	1.7	1.0	1.7	1.1	1.6	1.1	1.6	1.1
Left-right Orientation	2	1.7	0.6	1.9	0.4	2.0	0.2	1.8	0.6
Scrambled Sentences	4	2.5	1.3	2.2	1.3	2.6	1.3	1.7	1.3
Individual Test Total	36	23.9	9.2	23.4	8.5	22.8	7.9	17.3	8.8
Metropolitan Achievement (raw scores)	35	25.9	7.5	25.4	7.6	27.0	7.4	21.1	7.6

TABLE I-18

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for First-Second Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 132		Control N = 142		Experimental N = 190		Control N = 166	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.4	0.9	12.5	1.1	12.6	0.9	12.4	1.2
Vowels	6	5.7	0.7	5.5	1.1	5.7	0.7	5.4	1.1
Consonant Blends	9	8.3	1.2	8.0	1.5	8.2	1.4	7.5	1.7
Blending Total	28	26.4	2.4	26.0	3.2	26.5	2.7	25.3	3.3
Vowel Combinations	9	6.8	2.0	6.8	2.1	7.2	1.7	6.0	2.1
Consonant Digraphs	6	5.0	1.5	5.0	1.4	5.4	1.1	4.6	1.5
Controlled Vowels	4	2.7	1.3	2.8	1.2	3.1	1.2	2.4	1.3
Larger Spelling Patterns	5	4.3	1.1	4.2	1.1	4.5	0.9	4.1	1.2
Sight Words	4	3.4	1.0	3.4	0.9	3.6	0.7	3.2	1.0
Chunking Total	28	22.2	5.9	22.1	5.7	23.7	4.6	20.3	5.8
Final e	6	4.5	1.8	4.5	1.7	4.8	1.5	4.1	1.7
Double Consonants	4	1.8	1.1	1.9	1.0	2.2	1.2	1.7	1.0
Open Syllables	4	3.3	1.0	3.3	1.0	3.5	0.8	3.1	1.0
Scanning Total	14	9.6	3.2	9.6	3.1	10.6	2.8	8.9	3.0
Morphemes	10	7.9	1.9	7.9	1.8	8.3	1.6	7.6	1.8
Linear Blending	6	5.0	1.4	5.0	1.4	5.3	1.1	4.7	1.5
Syntactic Units	7	5.9	1.5	5.9	1.7	6.4	1.2	5.7	1.7
Punctuation	5	2.7	1.4	2.8	1.4	3.5	1.3	2.9	1.4
Context (Total)	9	7.6	2.0	7.4	2.1	7.9	1.7	6.9	2.2
Context (Vocabulary)	4	3.4	1.0	3.3	1.2	3.6	0.9	3.0	1.1
Context (Sentences)	4	3.6	0.9	3.5	1.0	3.6	0.8	3.3	1.1
Sentence Questions	8	6.4	2.1	6.4	2.2	7.0	1.8	6.1	2.1
Reading for Meaning Total	45	35.3	8.6	35.4	8.7	38.4	7.2	33.9	8.7
Grand Total	115	93.5	18.9	93.1	19.5	99.1	16.1	88.4	19.1
Attitude:									
Attitude to School	9	7.8	1.7	7.5	2.0	8.1	1.6	7.9	1.7
Reading Preference	4	2.0	1.0	1.9	1.0	2.0	1.1	1.9	1.0
Math Preference	4	1.6	1.2	1.6	1.3	1.5	1.1	1.5	1.1
Social Studies Preference	4	1.7	1.2	1.7	1.3	1.6	1.2	1.7	1.1
Art Preference	4	3.3	1.1	3.2	1.2	3.4	0.9	3.4	1.0
Spelling Preference	4	1.4	1.0	1.6	1.1	1.4	1.0	1.4	1.0
Left-right Orientation	2	2.0	0.2	1.9	0.3	2.0	0.0	2.0	0.2
Scrambled Sentences	4	3.2	1.1	3.4	1.0	3.6	0.7	3.0	1.3
Individual Test Total	36	28.5	7.6	29.1	5.2	30.0	5.7	26.0	6.3
Metropolitan Achievement (raw scores)	40	25.7	9.6	26.0	9.5	29.1	8.6	23.1	8.8

TABLE I-19

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO Experimental N = 158 M	FRESNO Experimental N = 158 SD	FRESNO Control N = 172 M	FRESNO Control N = 172 SD	YOUNGSTOWN Experimental N = 401 M	YOUNGSTOWN Experimental N = 401 SD	YOUNGSTOWN Control N = 412 M	YOUNGSTOWN Control N = 412 SD
Consonants	13	11.3	1.4	11.2	1.6	11.7	1.4	11.3	1.6
Vowels	6	4.8	1.4	4.4	1.6	5.0	1.3	4.7	1.4
Consonant Blends	9	6.8	1.9	6.5	2.1	7.0	1.9	6.7	1.9
Blending Total	28	22.9	4.0	22.1	4.6	23.7	3.8	22.8	4.2
Vowel Combinations	9	4.4	1.8	4.4	2.2	4.9	1.8	4.5	1.9
Consonant Digraphs	6	2.6	1.7	2.6	1.9	3.5	1.7	3.0	1.7
Controlled Vowels	4	1.5	1.1	1.6	1.3	1.7	1.2	1.4	1.1
Larger Spelling Patterns	5	2.9	1.4	2.6	1.5	3.4	1.3	3.1	1.4
Sight Words	4	2.1	1.1	1.9	1.2	2.7	1.0	2.5	1.1
Chunking Total	28	13.4	5.3	13.2	6.4	16.1	5.4	14.6	5.5
Final e	6	2.4	1.6	2.5	1.6	2.8	1.7	2.5	1.7
Double Consonants	4	1.2	0.9	1.3	0.9	1.3	0.9	1.3	1.0
Open Syllables	4	2.6	1.1	2.3	1.3	2.6	1.1	2.3	1.2
Scanning Total	14	6.2	2.7	6.2	3.0	6.7	2.8	6.1	2.9
Morphemes	10	5.3	2.1	5.3	2.4	6.5	2.2	5.9	2.2
Linear Blending	6	3.2	1.5	2.9	1.8	4.0	1.4	3.9	1.4
Syntactic Units	7	4.5	1.9	3.7	2.2	5.0	1.8	4.5	2.0
Punctuation	5	1.6	1.1	1.6	1.0	2.0	1.2	1.8	1.2
Context (Total)	9	5.1	2.4	4.8	2.6	6.0	2.3	5.3	2.4
Context (Vocabulary)	4	2.1	1.3	1.9	1.3	2.5	1.3	2.4	1.2
Context (Sentences)	4	2.6	1.3	2.3	1.4	2.9	1.2	2.5	1.3
Sentence Questions	8	3.5	2.3	3.3	2.5	4.3	2.5	3.7	2.4
Reading for Meaning Total	45	23.1	8.6	21.6	10.2	27.9	9.0	25.1	9.3
Grand Total	115	65.6	18.2	63.1	22.3	74.4	19.2	68.6	20.1
Attitude:									
Attitude to School	9	7.4	1.7	7.3	1.8	8.0	1.3	7.8	1.6
Reading Preference	4	2.1	1.2	2.0	1.1	2.0	1.1	2.0	1.0
Math Preference	4	1.6	1.2	1.6	1.1	1.5	1.2	1.5	1.1
Social Studies Preference	4	1.4	1.3	1.6	1.3	1.6	1.1	1.7	1.2
Art Preference	4	3.0	1.2	2.9	1.2	3.1	1.2	3.2	1.1
Spelling Preference	4	1.8	1.1	1.9	1.1	1.7	1.1	1.6	1.1
Left-right Orientation	2	1.9	0.4	1.8	0.5	2.0	0.2	1.9	0.4
Scrambled Sentences	4	1.9	1.2	2.1	1.4	2.5	1.2	2.2	1.3
Individual Test Total	36	21.6	8.9	21.6	9.6	24.5	7.4	20.6	9.0
Metropolitan Achievement (raw scores)	35	24.0	7.2	22.0	8.3	25.8	7.0	24.1	7.3

TABLE I-20

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

		FRESNO				YOUNGSTOWN			
		Experimental N = 158		Control N = 172		Experimental N = 401		Control N = 412	
Test and Subtest	No. of Items	M	SD	M	SD	M	SD	M	SD
Consonants	13	12.6	0.7	12.2	1.0	12.5	0.8	12.3	0.9
Vowels	6	5.8	0.7	5.3	1.1	5.8	0.5	5.7	0.7
Consonant Blends	9	8.3	1.2	7.8	1.6	8.2	1.2	7.9	1.4
Blending Total	28	26.7	2.2	25.4	3.2	26.5	2.1	25.9	2.6
Vowel Combinations	9	6.8	1.9	5.9	2.0	6.9	1.8	6.2	1.9
Consonant Digraphs	6	5.1	1.3	4.1	1.7	5.3	1.1	4.6	1.5
Controlled Vowels	4	2.7	1.1	2.2	1.3	2.9	1.1	2.5	1.2
Larger Spelling Patterns	5	4.4	0.9	3.7	1.4	4.5	0.9	4.1	1.1
Sight Words	4	3.3	0.9	2.9	1.1	3.4	0.8	3.3	0.9
Chunking Total	28	22.4	4.9	18.8	6.3	22.9	4.7	20.6	5.3
Final e	6	4.7	1.6	3.7	1.8	4.7	1.4	4.1	1.6
Double Consonants	4	2.0	1.1	1.6	1.1	2.1	1.2	1.9	1.1
Open Syllables	4	3.3	0.9	3.0	1.0	3.5	0.8	3.3	0.9
Scanning Total	14	10.0	2.8	8.3	3.1	10.3	2.7	9.3	2.9
Morphemes	10	8.0	1.8	7.2	2.2	8.1	1.5	7.7	1.6
Linear Blending	6	4.9	1.2	4.4	1.5	5.2	1.1	4.8	1.3
Syntactic Units	7	6.1	1.3	5.5	1.7	6.4	1.1	5.9	1.5
Punctuation	5	2.9	1.4	2.3	1.3	3.3	1.3	2.5	1.4
Context (Total)	9	7.4	1.7	6.8	2.2	7.8	1.6	7.3	1.8
Context (Vocabulary)	4	3.3	0.9	3.0	1.2	3.5	0.9	3.2	1.1
Context (Sentences)	4	3.6	0.8	3.3	1.2	3.7	0.7	3.4	1.0
Sentence Questions	8	6.4	1.9	5.4	2.5	6.8	1.8	6.1	2.1
Reading for Meaning Total	45	35.9	7.3	31.5	9.5	37.7	6.6	34.4	7.7
Grand Total	115	95.0	15.8	84.0	20.7	97.4	14.8	90.3	17.0
Attitude:									
Attitude to School	9	7.6	1.7	7.6	1.7	8.0	1.6	7.9	1.7
Reading Preference	4	1.8	1.1	2.1	1.1	1.9	1.0	2.0	1.0
Math Preference	4	1.7	1.2	1.8	1.3	1.7	1.2	1.5	1.2
Social Studies Preference	4	1.6	1.2	1.4	1.3	1.6	1.2	1.7	1.2
Art Preference	4	3.4	0.9	3.1	1.2	3.2	1.3	3.4	1.1
Spelling Preference	4	1.4	1.1	1.7	1.1	1.6	1.1	1.5	1.0
Left-right Orientation	2	1.7	0.7	1.8	0.5	2.0	0.0	2.0	0.2
Scrambled Sentences	4	3.4	1.0	2.6	1.5	3.5	0.8	3.0	1.1
Individual Test Total	36	30.8	4.0	26.7	7.2	29.8	5.2	26.5	6.4
Metropolitan Achievement (raw scores)	40	25.2	9.3	20.8	9.4	26.9	8.6	24.5	8.7

TABLE I-21

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 158		Control N = 172		Experimental N = 401		Control N = 412	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.6	0.7	12.3	1.0	12.5	0.8	12.3	1.1
Vowels	6	5.7	0.7	5.5	1.0	5.8	0.6	5.6	0.8
Consonant Blends	9	8.4	1.1	8.0	1.5	8.1	1.4	7.9	1.5
Blending Total	28	26.7	2.2	25.8	3.0	26.3	2.3	25.9	2.8
Vowel Combinations	9	7.0	1.7	6.1	2.2	7.2	1.7	6.5	1.8
Consonant Digraphs	6	5.2	1.3	4.1	1.8	5.3	1.1	4.7	1.5
Controlled Vowels	4	2.8	1.1	2.5	1.2	3.0	1.1	2.6	1.2
Larger Spelling Patterns	5	4.3	1.0	3.8	1.5	4.4	0.9	4.2	1.1
Sight Words	4	3.5	0.7	3.1	1.0	3.5	0.8	3.3	0.9
Chunking Total	28	22.8	4.8	19.6	6.5	23.5	4.5	21.3	5.3
Final e	6	4.8	1.4	3.9	1.8	4.8	1.3	4.2	1.5
Double Consonants	4	1.9	1.1	1.6	1.1	2.1	1.2	1.9	1.1
Open Syllables	4	3.6	0.7	3.1	1.0	3.5	0.8	3.3	0.9
Scanning Total	14	10.2	2.5	8.6	3.2	10.4	2.6	9.5	2.8
Morphemes	10	8.2	1.6	7.4	2.0	8.2	1.4	7.7	1.7
Linear Blending	6	5.1	1.2	4.7	1.4	5.3	1.0	5.0	1.3
Syntactic Units	7	6.4	1.2	5.7	1.7	6.4	1.2	6.1	1.4
Punctuation	5	3.0	1.4	2.6	1.4	3.3	1.4	2.7	1.4
Context (Total)	9	7.9	1.6	7.1	2.1	8.0	1.5	7.5	1.9
Context (Vocabulary)	4	3.4	1.0	3.1	1.2	3.6	0.8	3.3	1.0
Context (Sentences)	4	3.7	0.7	3.4	1.0	3.8	0.6	3.5	0.9
Sentence Questions	8	6.7	1.9	5.8	2.5	6.9	1.8	6.4	2.2
Reading for Meaning Total	45	37.3	6.7	33.3	9.4	38.1	6.5	35.4	7.8
Grand Total	115	97.0	14.7	87.2	[illegible]	98.3	14.5	92.0	17.1
Attitude:									
Attitude to School	9	7.9	1.5	7.8	1.6	7.7	1.9	7.7	1.9
Reading Preference	4	1.7	1.0	1.9	1.0	1.9	1.1	1.8	1.0
Math Preference	4	1.6	1.2	1.6	1.2	1.6	1.3	1.6	1.2
Social Studies Preference	4	1.6	1.3	1.8	1.3	1.6	1.1	1.6	1.1
Art Preference	4	3.3	1.2	3.1	1.4	3.3	1.2	3.5	1.0
Spelling Preference	4	1.7	1.0	1.6	1.0	1.6	1.0	1.4	1.0
Left-right Orientation	2	1.9	0.3	1.9	0.4	2.0	0.1	2.0	0.2
Scrambled Sentences	4	3.7	0.7	3.4	1.1	3.4	0.8	3.1	1.0
Individual Test Total	36	30.5	4.6	28.6	7.7	29.3	5.3	27.1	6.6
Metropolitan Achievement (raw scores)	40	27.8	9.1	24.0	10.0	28.2	8.5	25.7	9.0

TABLE I-22

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 158		Control N = 172		Experimental N = 401		Control N = 412	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.8	0.5	12.5	1.0	12.7	0.7	12.7	0.6
Vowels	6	5.9	0.5	5.7	0.8	5.9	0.5	5.8	0.5
Consonant Blends	9	8.7	0.8	8.3	1.3	8.6	0.9	8.5	0.9
Blending Total	28	27.3	1.4	26.5	2.6	27.2	1.7	27.0	1.6
Vowel Combinations	9	7.7	1.6	6.9	2.0	7.7	1.5	7.3	1.7
Consonant Digraphs	6	5.5	0.9	5.0	1.4	5.6	0.8	5.4	1.0
Controlled Vowels	4	3.3	1.0	2.9	1.2	3.5	0.8	3.2	1.0
Larger Spelling Patterns	5	4.7	0.7	4.3	1.1	4.7	0.7	4.6	0.7
Slight Words	4	3.8	0.5	3.5	0.8	3.8	0.6	3.7	0.7
Chunking Total	28	25.0	3.8	22.6	5.4	25.4	3.5	24.2	4.0
Final e	6	5.2	1.1	4.6	1.6	5.2	1.0	4.9	1.3
Double Consonants	4	2.1	1.1	2.0	1.1	2.5	1.1	2.3	1.1
Open Syllables	4	3.7	0.6	3.4	0.9	3.8	0.6	3.6	0.7
Scanning Total	14	11.0	2.2	10.0	2.9	11.4	2.2	10.8	2.4
Morphemes	10	8.7	1.2	8.1	1.8	8.6	1.2	8.3	1.2
Linear Blending	6	5.5	0.9	5.2	1.2	5.6	0.9	5.4	0.9
Syntactic Units	7	6.6	0.9	6.3	1.4	6.7	0.8	6.6	1.0
Punctuation	5	3.7	1.1	3.4	1.2	4.1	1.1	3.5	1.3
Context (Total)	9	8.4	1.1	7.8	1.8	8.4	1.1	8.3	1.2
Context (Vocabulary)	4	3.8	0.7	3.5	1.0	3.8	0.6	3.7	0.7
Context (Sentences)	4	3.9	0.4	3.6	0.9	3.9	0.4	3.8	0.5
Sentence Questions	8	7.3	1.5	6.8	2.1	7.6	1.0	7.3	1.4
Reading for Meaning Total	45	40.2	5.1	37.5	7.9	40.9	4.6	39.4	5.2
Grand Total	115	103.5	11.4	96.6	17.4	104.9	10.8	101.4	11.9
Attitude:									
Attitude to School	9	7.9	1.7	7.7	1.8	7.4	2.1	7.3	2.1
Reading Preference	4	1.9	1.0	1.9	1.1	1.8	1.1	1.8	1.0
Math Preference	4	1.6	1.3	1.8	1.2	1.8	1.3	1.7	1.3
Social Studies Preference	4	1.6	1.2	1.4	1.3	1.4	1.1	1.5	1.1
Art Preference	4	3.2	1.2	3.2	1.2	3.2	1.2	3.4	1.1
Spelling Preference	4	1.7	1.1	1.7	1.1	1.8	1.0	1.6	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.2	2.0	0.1	2.0	0.1
Scrambled Sentences	4	3.9	0.4	3.5	0.8	3.7	0.6	3.7	0.6
Individual Test Total	36	31.5	2.9	30.4	4.3	31.6	4.0	30.1	5.1
Metropolitan Achievement (raw scores)	50	25.8	10.1	23.8	10.6	29.7	10.6	26.5	10.8

TABLE I-23

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 106		Control N = 126		Experimental N = 243		Control N = 285	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	10.8	1.4	10.7	1.5	11.2	1.4	10.8	1.6
Vowels	6	4.4	1.5	3.9	1.6	4.6	1.4	4.2	1.4
Consonant Blends	9	6.1	1.9	5.8	2.0	6.3	1.8	6.0	1.8
Blending Total	28	21.3	3.9	20.5	4.2	22.1	3.8	21.0	3.8
Vowel Combinations	9	3.8	1.5	3.6	1.7	4.1	1.5	3.8	1.5
Consonant Digraphs	6	1.9	1.4	1.8	1.4	2.7	1.4	2.3	1.3
Controlled Vowels	4	1.2	0.9	1.2	1.0	1.2	0.9	1.1	0.9
Larger Spelling Patterns	5	2.3	1.2	2.1	1.3	2.9	1.2	2.6	1.2
Sight Words	4	1.7	1.0	1.6	1.1	2.3	0.9	2.2	1.0
Chunking Total	28	10.9	3.5	10.2	3.9	13.3	3.7	11.8	3.4
Final e	6	1.8	1.2	2.0	1.3	2.0	1.2	1.7	1.2
Double Consonants	4	1.0	0.8	1.1	0.8	1.1	0.9	1.1	0.9
Open Syllables	4	2.2	1.0	1.9	1.1	2.1	1.1	1.9	1.1
Scanning Total	14	5.1	2.0	5.0	2.3	5.3	2.2	4.7	1.9
Morphemes	10	4.3	1.7	4.3	1.8	5.4	2.0	5.0	1.8
Linear Blending	6	2.5	1.2	2.2	1.4	3.3	1.3	3.3	1.3
Syntactic Units	7	3.7	1.7	2.8	1.9	4.3	1.8	3.7	1.8
Punctuation	5	1.5	1.1	1.5	1.0	1.7	1.1	1.6	1.0
Context (Total)	9	4.1	2.1	3.8	2.2	4.9	2.0	4.3	2.0
Context (Vocabulary)	4	1.5	1.0	1.4	1.0	2.0	1.2	1.9	1.1
Context (Sentences)	4	2.0	1.2	1.8	1.3	2.3	1.1	2.0	1.2
Sentence Questions	8	2.7	1.8	2.3	1.8	3.0	1.8	2.5	1.5
Reading for Meaning Total	45	18.8	6.3	16.9	7.0	22.6	6.9	20.4	6.4
Grand Total	115	56.1	12.2	52.6	14.6	63.3	14.1	57.9	12.8
Attitudes:									
Attitude to School	9	7.1	1.8	7.2	1.8	7.9	1.4	7.6	1.7
Reading Preference	4	2.2	1.2	1.9	1.0	1.9	1.1	2.1	1.0
Math Preference	4	1.7	1.2	1.7	1.1	1.6	1.1	1.4	1.0
Social Studies Preference	4	1.5	1.3	1.6	1.3	1.7	1.1	1.6	1.2
Art Prefererce	4	2.8	1.3	2.8	1.2	3.1	1.2	3.2	1.1
Spelling Preference	4	1.8	1.1	1.9	1.1	1.7	1.1	1.6	1.3
Left-right Orientation	2	1.8	0.5	1.7	0.6	1.9	0.3	1.9	0.4
Scrambled Sentences	4	1.4	1.1	1.5	1.3	2.2	1.3	1.6	1.1
Individual Test Total	36	16.9	7.4	15.2	6.9	21.0	6.6	16.1	5.6
Metropolitan Achievement (raw scores)	35	20.2	5.4	18.0	5.5	21.4	5.4	20.2	5.2

TABLE I-24

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 106		Control N = 126		Experimental N = 243		Control N = 285	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.5	0.7	12.0	1.1	12.4	0.9	12.1	1.0
Vowels	6	5.7	0.8	5.1	1.2	5.7	0.7	5.5	0.8
Consonant Blends	9	8.1	1.4	7.4	1.7	7.9	1.3	7.6	1.6
Blending Total	28	26.2	2.5	24.5	3.3	25.9	2.2	25.2	2.8
Vowel Combinations	9	6.2	1.8	5.1	1.8	6.2	1.8	5.4	1.7
Consonant Digraphs	6	4.8	1.4	3.4	1.6	5.0	1.3	4.0	1.5
Controlled Vowels	4	2.4	1.1	1.7	1.1	2.4	1.1	2.0	1.1
Larger Spelling Patterns	5	4.2	1.0	3.3	1.4	4.2	1.0	3.8	1.1
Sight Words	4	3.1	1.0	2.6	1.0	3.2	0.9	3.0	0.9
Chunking Total	26	20.6	4.9	16.2	5.2	20.9	4.7	18.3	4.6
Final e	6	4.3	1.7	3.1	1.7	4.2	1.4	3.6	1.5
Double Consonants	4	1.7	1.0	1.3	1.0	1.7	1.1	1.5	1.0
Open Syllables	4	3.1	1.0	2.8	1.0	3.3	0.9	3.1	1.0
Scanning Total	14	9.1	2.8	7.2	2.7	9.2	2.6	8.2	2.5
Morphemes	10	7.6	1.9	6.6	2.2	7.7	1.6	7.2	1.6
Linear Blending	6	4.6	1.3	3.9	1.5	4.8	1.2	4.4	1.3
Syntactic Units	7	5.8	1.5	5.0	1.7	6.1	1.3	5.5	1.7
Punctuation	5	2.6	1.4	1.9	1.1	2.9	1.3	2.1	1.3
Context (Total)	9	6.9	1.8	6.2	2.3	7.3	1.8	6.8	2.0
Context (Vocabulary)	4	3.0	1.0	2.7	1.3	3.2	1.0	2.8	1.1
Context (Sentences)	4	3.4	0.9	3.0	1.2	3.5	0.9	3.2	1.1
Sentence Questions	8	5.9	2.1	4.6	2.4	6.3	2.0	5.4	2.2
Reading for Meaning Total	45	33.4	7.6	28.2	8.8	35.2	7.1	31.4	7.3
Grand Total	115	89.4	16.2	76.0	18.2	91.2	15.0	83.0	15.2
Attitude:									
Attitude to School	9	7.5	1.6	7.7	1.7	7.9	1.7	7.8	1.7
Reading Preference	4	1.8	1.0	2.0	1.1	1.9	1.0	2.1	0.9
Math Preference	4	1.7	1.3	1.8	1.2	1.7	1.2	1.4	1.1
Social Studies Preference	4	1.6	1.2	1.5	1.3	1.6	1.1	1.7	1.2
Art Preference	4	3.5	0.9	3.0	1.3	3.2	1.3	3.4	1.0
Spelling Preference	4	1.4	1.0	1.7	1.1	1.6	1.1	1.5	1.1
Left-right Orientation	2	1.7	0.7	1.8	0.5	2.0	0.0	2.0	0.2
Scrambled Sentences	4	3.2	1.0	2.0	1.2	3.4	0.9	2.7	1.1
Individual Test Total	36	29.7	4.2	23.4	6.5	28.2	5.2	23.9	5.6
Metropolitan Achievement (raw scores)	40	21.5	8.7	16.8	6.9	22.6	7.7	20.5	6.9

TABLE I-25

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 106		Control N = 126		Experimental N = 243		Control N = 285	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.4	0.9	12.1	1.0	12.3	0.9	12.1	1.2
Vowels	6	5.5	[illegible].8	5.3	1.1	5.7	0.7	5.5	0.9
Consonant Blends	9	8.2	1.3	7.7	1.6	7.7	1.5	7.6	1.6
Blending Total	28	26.2	2.5	25.1	3.2	25.6	2.5	25.1	3.1
Vowel Combinations	9	6.5	1.7	5.3	2.0	6.5	1.6	5.8	1.7
Consonant Digraphs	6	4.8	1.4	3.5	1.7	5.0	1.2	4.3	1.5
Controlled Vowels	4	2.5	1.1	2.1	1.1	2.6	1.1	2.1	1.1
Larger Spelling Patterns	5	4.0	1.2	3.4	1.5	4.2	1.0	3.9	1.1
Sight Words	4	3.3	0.8	2.8	1.0	3.3	0.9	3.0	1.0
Chunking Total	28	21.1	4.9	17.1	5.8	21.6	4.5	19.0	4.7
Final e	6	4.4	1.6	3.2	1.7	4.3	1.4	3.7	1.5
Double Consonants	4	1.7	1.1	1.3	1.0	1.7	1.1	1.6	0.9
Open Syllables	4	3.4	0.7	2.8	1.0	3.3	0.9	3.1	0.9
Scanning Total	14	9.5	2.6	7.4	2.8	9.4	2.4	8.4	2.5
Morphemes	10	7.7	1.7	6.8	2.0	7.7	1.5	7.3	1.7
Linear Blending	6	4.9	1.3	4.3	1.4	5.0	1.2	4.6	1.4
Syntactic Units	7	6.1	1.3	5.3	1.8	6.1	1.3	5.8	1.5
Punctuation	5	2.6	1.3	2.2	1.3	2.9	1.3	2.3	1.3
Context (Total)	9	7.5	1.7	6.5	2.2	7.5	1.7	7.0	2.0
Context (Vocabulary)	4	3.2	1.1	2.8	1.3	3.4	0.9	3.0	1.1
Context (Sentences)	4	3.6	0.9	3.2	1.1	3.6	0.7	3.3	1.1
Sentence Questions	8	6.2	2.2	5.1	2.6	6.4	2.0	5.8	2.3
Reading for Meaning Total	45	35.0	7.0	30.2	9.1	35.6	7.0	32.7	7.9
Grand Total	115	91.8	15.1	79.8	19.4	92.2	14.8	85.2	16.2
Attitude:									
Attitude to School	9	7.9	1.4	7.8	1.5	7.6	2.0	7.6	1.9
Reading Preference	4	1.8	1.0	1.9	1.0	1.8	1.0	1.9	0.9
Math Preference	4	1.4	1.2	1.6	1.2	1.6	1.3	1.5	1.2
Social Studies Preference	4	1.6	1.3	1.8	1.3	1.6	1.1	1.7	1.1
Art Preference	4	3.4	1.1	3.1	1.4	3.3	1.3	3.5	0.9
Spelling Preference	4	1.8	1.0	1.6	1.0	1.7	1.0	1.4	1.0
Left-right Orientation	2	2.0	0.0	1.9	0.3	2.0	0.1	2.0	0.1
Scrambled Sentences	4	3.7	0.7	3.0	1.3	3.2	1.0	2.8	1.0
Individual Test Total	36	29.5	3.5	25.1	8.2	27.2	5.3	24.0	6.1
Metropolitan Achievement (raw scores)	40	24.5	8.9	19.8	8.2	24.3	7.9	21.9	7.8

TABLE I-26

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 106		Control N = 126		Experimental N = 243		Control N = 285	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.7	0.6	12.4	1.2	12.6	0.8	12.6	0.7
Vowels	6	5.8	0.5	5.6	0.8	5.8	0.6	5.8	0.5
Consonant Blends	9	8.5	0.9	8.1	1.3	8.5	1.1	8.3	1.1
Blending Total	28	27.1	1.6	26.1	2.7	26.9	2.1	26.6	1.7
Vowel Combinations	9	7.3	1.6	6.4	1.9	7.2	1.6	6.8	1.7
Consonant Digraphs	6	5.3	1.1	4.7	1.4	5.5	1.0	5.2	1.1
Controlled Vowels	4	3.0	1.1	2.6	1.2	3.3	0.9	2.9	1.0
Larger Spelling Patterns	5	4.5	0.8	4.1	1.1	4.5	0.8	4.5	0.8
Sight Words	4	3.7	0.6	3.4	0.9	3.7	0.7	3.6	0.7
Chunking Total	28	23.8	4.2	21.2	5.3	24.2	3.9	22.9	4.1
Final e	6	4.9	1.3	4.2	1.6	4.8	1.1	4.5	1.3
Double Consonants	4	1.8	1.0	1.7	1.0	2.1	1.1	2.0	1.0
Open Syllables	4	3.6	0.7	3.3	1.0	3.7	0.6	3.4	0.8
Scanning Total	14	10.3	2.2	9.1	2.8	10.6	2.2	9.9	2.2
Morphemes	10	8.4	1.3	7.7	1.7	8.3	1.3	8.0	1.3
Linear Blending	6	5.3	1.0	5.0	1.3	5.4	1.0	5.2	1.0
Syntactic Units	7	6.5	1.0	6.1	1.4	6.5	1.0	6.4	1.1
Punctuation	5	3.5	1.1	3.1	1.2	3.8	1.2	3.2	1.3
Context (Total)	9	8.2	1.2	7.5	1.9	8.2	1.2	8.0	1.3
Context (Vocabulary)	4	3.7	0.8	3.3	1.1	3.7	0.7	3.6	0.8
Context (Sentences)	4	3.8	0.5	3.5	1.0	3.8	0.5	3.8	0.6
Sentence Questions	8	7.0	1.7	6.5	2.2	7.4	1.2	7.0	1.6
Reading for Meaning Total	45	38.9	5.7	35.8	7.8	39.5	5.2	37.8	5.4
Grand Total	115	100.1	12.5	92.2	16.8	101.2	11.9	97.3	12.1
Attitude:									
Attitude to School	9	7.6	1.8	7.8	1.8	7.3	2.2	7.2	2.1
Reading Preference	4	1.9	1.0	1.9	1.0	1.8	1.1	1.8	1.0
Math Preference	4	1.6	1.4	1.8	1.1	1.8	1.3	1.6	1.2
Social Studies Preference	4	1.6	1.2	1.5	1.3	1.4	1.1	1.4	1.1
Art Preference	4	3.3	1.2	3.2	1.2	3.2	1.2	3.4	1.0
Spelling Preference	4	1.7	1.1	1.7	1.1	1.8	0.9	1.7	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.1	2.0	0.1
Scrambled Sentences	4	3.8	0.5	3.2	0.9	3.6	0.7	3.6	0.6
Individual Test Total	36	30.5	2.8	28.3	4.3	30.1	4.2	28.0	4.9
Metropolitan Achievement (raw scores)	50	21.7	8.8	19.7	8.1	24.6	9.1	21.4	8.3

TABLE I-27

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO Experimental N = 52 M	SD	FRESNO Control N = 46 M	SD	YOUNGSTOWN Experimental N = 158 M	SD	YOUNGSTOWN Control N = 127 M	SD
Consonants	13	12.3	0.8	12.5	0.7	12.4	0.8	12.5	0.7
Vowels	6	5.6	0.7	5.8	0.6	5.7	0.7	5.9	0.4
Consonant Blends	9	8.2	1.0	8.3	0.8	8.1	1.2	8.3	1.0
Blending Total	28	26.1	1.7	26.6	1.4	26.3	2.2	26.7	1.5
Vowel Combinations	9	5.8	1.7	6.7	1.7	6.0	1.6	6.3	1.5
Consonant Digraphs	6	3.9	1.4	4.8	1.2	4.7	1.3	4.6	1.3
Controlled Vowels	4	2.2	1.1	2.7	1.2	2.3	1.2	2.3	1.1
Larger Spelling Patterns	5	4.0	1.0	4.0	1.0	4.2	1.0	4.4	0.9
Sight Words	4	2.8	0.9	3.0	0.9	3.3	0.8	3.4	0.7
Chunking Total	28	18.7	4.5	21.2	5.0	20.5	4.5	21.0	3.9
Final **e**	6	3.5	1.6	4.1	1.4	4.0	1.5	4.3	1.4
Double Consonants	4	1.6	1.0	1.9	1.0	1.5	1.0	1.6	1.1
Open Syllables	4	3.4	0.8	3.5	0.7	3.2	0.8	3.2	0.9
Scanning Total	14	8.4	2.7	9.5	2.3	8.8	2.3	9.2	2.4
Morphemes	10	7.1	1.4	8.1	1.1	8.1	1.2	8.1	1.2
Linear Blending	6	4.4	1.2	4.9	1.1	5.1	1.0	5.1	0.9
Syntactic Units	7	6.0	1.1	6.0	1.2	6.2	1.1	6.4	1.0
Punctuation	5	1.8	1.0	1.8	0.9	2.4	1.3	2.3	1.3
Context (Total)	9	7.3	1.3	7.6	1.1	7.7	1.2	7.5	1.3
Context (Vocabulary)	4	3.2	0.9	3.4	0.9	3.3	1.0	3.4	0.8
Context (Sentences)	4	3.6	0.6	3.8	0.4	3.7	0.6	3.7	0.7
Sentence Questions	8	5.3	2.2	6.0	2.1	6.3	1.9	6.3	1.9
Reading for Meaning Total	45	31.9	5.5	34.5	5.3	35.9	5.2	35.7	4.9
Grand Total	115	85.1	12.1	91.8	12.2	91.4	12.2	92.5	10.8
Attitude:									
Attitude to School	9	8.2	1.1	7.7	1.7	8.2	1.2	8.1	1.4
Reading Preference	4	2.1	1.1	2.2	1.2	2.1	1.1	1.9	1.0
Math Preference	4	1.5	1.1	1.4	1.0	1.5	1.2	1.7	1.2
Social Studies Preference	4	1.3	1.2	1.5	1.2	1.6	1.2	1.7	1.2
Art Preference	4	3.3	1.1	3.2	1.2	3.1	1.2	3.1	1.3
Spelling Preference	4	1.8	1.0	1.7	1.0	1.7	1.1	1.6	1.1
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	2.7	1.1	2.8	1.1	3.0	1.1	3.5	0.8
Individual Test Total	36	27.9	6.5	30.1	4.9	29.8	5.0	32.3	4.4
Metropolitan Achievement (raw scores)	35	31.9	1.8	33.1	1.9	32.6	2.0	32.7	1.9

TABLE I-28

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)

		FRESNO				YOUNGSTOWN			
		Experimental N = 52		Control N = 46		Experimental N = 158		Control N = 127	
Test and Subtest	No. of Items	M	SD	M	SD	M	SD	M	SD
Consonants	13	12.9	0.3	12.9	0.3	12.8	0.6	12.8	0.4
Vowels	6	6.0	0.2	6.0	0.0	6.0	0.1	6.0	0.2
Consonant Blends	9	8.8	0.4	8.9	0.3	8.8	0.7	8.7	0.5
Blending Total	28	27.7	0.5	27.8	0.5	27.6	1.3	27.5	0.7
Vowel Combinations	9	8.1	1.1	7.9	1.3	8.0	1.3	7.9	1.2
Consonant Digraphs	6	5.9	0.4	5.8	0.5	5.8	0.5	5.8	0.5
Controlled Vowels	4	3.4	0.7	3.5	0.5	3.5	0.8	3.5	0.7
Larger Spelling Patterns	5	4.9	0.4	4.8	0.4	4.8	0.5	4.8	0.5
Sight Words	4	3.8	0.5	3.9	0.4	3.8	0.5	3.9	0.3
Chunking Total	28	26.0	2.0	26.0	2.2	25.9	2.6	25.9	2.3
Final	6	5.7	0.6	5.4	0.8	5.5	0.8	5.4	0.7
Double Consonants	4	2.5	1.0	2.2	1.2	2.7	1.2	2.7	1.0
Open Syllables	4	3.7	0.5	3.8	0.4	3.8	0.4	3.8	0.4
Scanning Total	14	11.9	1.5	11.4	1.8	12.1	1.8	12.0	1.6
Morphemes	10	8.9	0.8	8.8	0.9	8.8	1.1	8.8	0.9
Linear Blending	6	5.6	0.7	5.7	0.5	5.7	0.6	5.8	0.5
Syntactic Units	7	6.8	0.5	6.8	0.6	6.8	0.5	6.8	0.4
Punctuation	5	3.6	1.2	3.3	1.3	3.9	1.1	3.5	1.2
Context (Total)	9	8.5	0.7	8.4	0.9	8.6	0.7	8.6	0.6
Context (Vocabulary)	4	3.9	0.3	3.9	0.4	3.9	0.3	3.9	0.3
Context (Sentences)	4	4.0	0.2	4.0	0.1	3.9	0.3	4.0	0.2
Sentence Questions	8	7.6	0.7	7.8	0.6	7.7	0.8	7.7	0.6
Reading for Meaning Total	45	40.9	2.5	40.8	3.0	41.5	3.1	41.2	2.5
Grand Total	115	106.5	5.2	105.9	5.6	107.1	7.6	106.6	5.4
Attitude:									
Attitude to School	9	7.8	1.9	7.6	1.7	8.2	1.5	8.1	1.7
Reading Preference	4	1.9	1.2	2.2	1.0	2.0	1.0	2.0	1.0
Math Preference	4	1.8	1.0	1.6	1.4	1.6	1.3	1.7	1.2
Social Studies Preference	4	1.5	1.2	1.3	1.3	1.7	1.2	1.7	1.2
Art Preference	4	3.4	0.9	3.2	1.2	3.1	1.3	3.3	1.3
Spelling Preference	4	1.4	1.1	1.8	1.0	1.6	1.1	1.4	1.0
Left-right Orientation	2	1.6	0.7	1.8	0.6	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.6	1.1	3.5	1.3	3.7	0.5	3.8	0.5
Individual Test Total	36	32.2	3.3	31.5	5.2	32.4	4.2	32.8	3.0
Metropolitan Achievement (raw scores)	40	32.8	4.9	31.7	6.1	33.5	5.1	33.5	4.8

TABLE I-29

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)

		FRESNO				YOUNGSTOWN			
		Experimental N = 52		Control N = 46		Experimental N = 158		Control N = 127	
Test and Subtest	No. of Items	M	SD	M	SD	M	SD	M	SD
Consonants	13	12.9	0.3	12.8	0.4	12.7	0.6	12.8	0.4
Vowels	6	5.9	0.3	6.0	0.0	5.9	0.3	6.0	0.2
Consonant Blends	9	8.9	0.3	8.9	0.3	8.7	0.8	8.8	0.6
Blending Total	28	27.7	0.5	27.7	0.5	27.3	1.4	27.5	0.8
Vowel Combinations	9	8.1	1.2	8.3	0.8	8.2	1.1	8.0	1.2
Consonant Digraphs	6	5.8	0.4	5.8	0.5	5.8	0.5	5.8	0.5
Controlled Vowels	4	3.4	0.8	3.3	0.8	3.6	0.7	3.7	0.6
Larger Spelling Patterns	5	4.9	0.3	4.8	0.4	4.8	0.6	4.9	0.4
Sight Words	4	4.0	0.2	4.0	0.2	3.9	0.4	3.9	0.3
Chunking Total	28	26.1	2.1	26.3	1.7	26.4	2.5	26.2	2.1
Final **e**	6	5.6	0.7	5.5	0.7	5.5	0.9	5.5	0.7
Double Consonants	4	2.3	1.0	2.3	1.1	2.7	1.1	2.7	1.1
Open Syllables	4	3.9	0.3	3.9	0.3	3.8	0.6	3.8	0.5
Scanning Total	14	11.8	1.5	11.8	1.5	12.0	1.9	11.9	1.7
Morphemes	10	9.1	0.8	9.0	0.8	8.9	0.9	8.8	0.9
Linear Blending	6	5.7	0.5	5.7	0.5	5.8	0.5	5.9	0.4
Syntactic Units	7	6.9	0.3	6.9	0.4	6.8	0.6	6.9	0.4
Punctuation	5	3.8	1.3	3.6	1.2	3.9	1.2	3.6	1.2
Context (Total)	9	8.7	0.6	8.8	0.5	8.7	0.7	8.7	0.7
Context (Vocabulary)	4	3.9	0.2	4.0	0.2	3.9	0.4	4.0	0.2
Context (Sentences)	4	4.0	0.2	4.0	0.0	3.9	0.2	4.0	0.2
Sentence Questions	8	7.8	0.5	7.9	0.4	7.8	0.7	7.7	0.8
Reading for Meaning Total	45	42.0	2.1	41.8	1.9	41.9	2.8	41.5	2.5
Grand Total	115	107.6	4.6	107.7	4.4	107.6	7.6	107.1	5.2
Attitude:									
Attitude to School	9	7.9	1.7	7.6	1.8	7.9	1.8	7.9	1.8
Reading Preference	4	1.4	1.0	2.0	1.2	2.0	1.2	1.6	1.1
Math Preference	4	2.0	1.2	1.5	1.4	1.6	1.3	1.8	1.3
Social Studies Preference	4	1.6	1.3	1.7	1.3	1.6	1.1	1.6	1.1
Art Preference	4	3.3	1.2	3.2	1.3	3.2	1.1	3.3	1.1
Spelling Preference	4	1.7	1.0	1.5	0.9	1.6	1.0	1.6	1.0
Left-right Orientation	2	1.9	0.5	1.8	0.6	2.0	0.1	2.0	0.2
Scrambled Sentences	4	3.7	0.8	3.9	0.4	3.7	0.5	3.8	0.4
Individual Test Total	36	32.0	5.8	33.3	3.0	32.4	3.5	32.7	2.7
Metropolitan Achievement (raw scores)	40	34.5	4.6	35.6	3.4	34.3	5.3	34.2	4.8

TABLE I-30

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno and Youngstown (by Treatment Group)

Test and Subtest	No. of Items	FRESNO				YOUNGSTOWN			
		Experimental N = 52		Control N = 46		Experimental N = 158		Control N = 127	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	13.0	0.0	12.9	0.5	12.9	0.4	12.9	0.2
Vowels	6	6.0	0.2	5.8	0.6	6.0	0.3	6.0	0.2
Consonant Blends	9	8.9	0.5	8.8	0.8	8.8	0.5	8.9	0.3
Blending Total	28	27.8	0.5	27.5	1.8	27.6	0.9	27.8	0.4
Vowel Combinations	9	8.7	0.7	8.3	1.4	8.5	0.8	8.5	0.9
Consonant Digraphs	6	6.0	0.2	5.8	0.5	5.9	0.4	5.9	0.2
Controlled Vowels	4	3.8	0.4	3.7	0.7	3.9	0.5	3.9	0.4
Larger Spelling Patterns	5	4.9	0.3	4.8	0.6	4.9	0.3	4.9	0.3
Sight Words	4	4.0	0.0	3.9	0.6	4.0	0.2	4.0	0.1
Chunking Total	28	27.4	1.0	26.6	3.4	27.2	1.6	27.2	1.3
Final	6	5.7	0.5	5.6	0.9	5.8	0.6	5.7	0.6
Double Consonants	44	2.6	1.1	2.8	1.0	3.1	1.0	3.1	0.9
Open Syllables	4	3.9	0.3	3.8	0.7	3.9	0.4	3.9	0.3
Scanning Total	14	12.3	1.4	12.3	2.0	12.8	1.5	12.7	1.4
Morphemes	10	9.3	0.7	9.0	1.6	9.0	0.9	9.0	0.9
Linear Blending	6	5.9	0.3	5.8	0.8	5.9	0.4	5.9	0.[illegible]
Syntactic Units	7	6.9	0.3	6.8	1.1	6.9	0.2	7.0	0.1
Punctuation	5	4.1	1.0	4.8	0.9	4.5	0.7	4.3	0.9
Context (Total	9	8.7	0.6	8.6	1.4	8.8	0.6	8.8	0.5
Context (Vocabulary)	4	4.0	0.1	3.9	0.6	4.0	0.2	4.0	0.2
Context (Sentences)	4	4.0	0.2	3.9	0.6	4.0	0.2	4.0	0.1
Sentence Questions	8	8.0	0.2	7.7	1.2	7.9	0.4	7.9	0.4
Reading for Meaning Total	45	42.9	1.6	42.2	6.0	43.0	2.0	42.9	1.7
Grand Total	115	110.4	3.0	108.6	12.6	110.7	5.2	110.5	3.5
Attitude:									
Attitude to School	9	8.5	1.0	7.5	1.8	7.6	1.9	7.6	2.0
Reading Preference	4	2.0	1.1	1.9	1.2	2.0	1.2	1.9	1.0
Math Preference	4	1.7	1.3	1.7	1.3	1.6	1.3	1.9	1.4
Social Studies Preference	4	1.6	1.3	1.2	1.2	1.4	1.1	1.6	1.1
Art Preference	4	3.1	1.2	3.4	1.0	3.2	1.2	3.1	1.3
Spelling Preference	4	1.6	1.2	1.7	1.1	1.8	1.1	1.5	1.1
Left-right Orientation	2	2.0	0.0	1.9	0.3	2.0	0.1	2.0	0.0
Scrambled Sentences	4	4.0	0.0	4.0	0.0	3.9	0.4	3.9	0.5
Individual Test Total	36	33.1	2.3	33.3	2.1	33.8	2.1	34.0	2.4
Metropolitan Achievement (raw scores)	50	34.2	7.0	35.2	8.2	37.5	7.6	37.9	6.4

TABLE I-31

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=66		EC N=66		CE N=67		CC N=75	
		M	SD	M	SD	M	SD	M	SD
Matching	8	7.1	1.1	7.1	1.1	7.1	1.2	7.4	0.9
Consonants and Vowels	10	6.5	2.4	6.5	2.6	7.1	2.4	7.1	2.3
Consonant Blends & Digraphs	6	2.5	1.0	2.6	1.2	2.9	1.2	2.9	1.1
Grand Total	24	16.2	3.1	16.2	4.0	17.1	3.5	17.4	3.2
Attitude:									
Attitude to School	9	7.3	1.7	6.9	1.9	7.5	1.4	7.2	1.9
Reading Preference	4	2.2	1.3	2.2	1.1	2.1	1.1	2.1	1.1
Math Preference	4	1.7	1.0	1.7	1.1	1.5	1.1	1.6	1.1
Social Studies Preference	4	1.2	1.2	1.4	1.2	1.5	1.1	1.5	1.2
Art Preference	4	2.9	1.0	2.9	1.1	3.0	1.1	2.7	1.1
Spelling Preference	4	1.9	1.0	1.7	1.0	1.9	1.1	1.9	1.2
Metropolitan Achievement (raw scores)	39	22.3	7.9	23.8	8.7	24.6	8.1	26.5	6.9

TABLE I-32

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102 M	EE N=102 SD	EC N=88 M	EC N=88 SD	CE N=87 M	CE N=87 SD	CC N=79 M	CC N=79 SD
Matching	8	7.3	1.2	7.4	0.9	7.2	1.1	7.3	1.1
Consonants and Vowels	10	6.9	2.6	6.7	2.5	5.3	2.3	6.3	2.5
Consonant Blends & Digraphs	6	2.8	1.1	2.7	1.1	2.4	0.9	2.3	1.0
Grand Total	24	17.0	4.0	16.8	3.4	14.9	3.1	16.0	3.4
Attitude:									
Attitude to School	9	7.6	1.7	7.5	1.5	7.2	1.7	7.2	1.8
Reading Preference	4	2.1	1.2	2.1	1.2	2.0	1.1	2.2	1.1
Math Preference	4	1.7	1.0	1.6	1.0	1.6	1.1	1.6	1.1
Social Studies Preference	4	1.7	1.3	1.8	1.2	1.7	1.2	1.4	1.2
Art Preference	4	2.9	1.1	2.9	1.2	2.9	1.2	2.8	1.1
Spelling Preference	4	1.6	1.1	1.6	1.0	1.8	1.1	1.9	1.1
Metropolitan Achievement (raw scores)	39	25.4	7.6	24.4	7.0	20.2	6.0	22.7	7.6

TABLE I-33

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=66 M	EE N=66 SD	EC N=66 M	EC N=66 SD	CE N=67 M	CE N=67 SD	CC N=75 M	CC N=75 SD
Consonants	13	11.9	1.5	11.9	1.1	11.6	1.6	11.3	1.8
Vowels	6	5.2	1.2	5.0	1.2	5.0	1.2	4.6	1.6
Consonant Blends	9	7.2	1.8	7.1	1.9	7.3	1.6	6.9	2.1
Blending Total	28	24.3	4.0	24.0	3.5	24.0	4.0	22.8	4.9
Vowel Combinations	9	5.4	2.4	4.9	2.0	4.8	2.1	4.8	2.3
Consonant Digraphs	6	3.9	1.8	3.7	1.9	3.4	1.8	3.0	2.0
Controlled Vowels	4	1.9	1.2	1.7	1.1	1.9	1.1	1.9	1.2
Larger Spelling Patterns	5	3.6	1.3	3.3	1.3	3.3	1.3	3.1	1.4
Sight Words	4	2.6	1.2	2.4	1.3	2.2	1.2	2.3	1.2
Chunking Total	28	17.4	6.3	16.0	5.9	15.6	5.7	15.2	6.7
Final e	6	3.5	1.8	3.1	1.8	3.0	1.8	2.9	2.0
Double Consonants	4	1.5	1.0	1.3	0.9	1.4	1.0	1.3	0.9
Open Syllables	4	2.7	1.2	2.8	1.1	2.9	1.0	2.5	1.2
Scanning Total	14	7.7	3.1	7.2	2.7	7.4	3.0	6.6	3.3
Morphemes	10	6.0	2.1	5.8	2.6	6.1	2.2	6.4	2.3
Linear Blending	6	3.9	1.4	3.8	1.6	3.4	1.5	3.5	1.7
Syntactic Units	7	4.5	2.1	4.0	2.0	4.5	1.8	4.1	2.1
Punctuation	5	1.9	1.1	1.8	1.3	1.7	1.1	1.7	1.1
Context (Total)	9	5.8	2.6	5.7	2.5	5.8	2.3	5.5	2.4
Context (Vocabulary)	4	2.5	1.3	2.4	1.4	2.5	1.2	2.2	1.3
Context (Sentences)	4	2.8	1.4	2.9	1.3	2.9	1.2	2.7	1.3
Sentence Questions	8	4.0	2.3	3.8	2.5	3.6	2.0	3.7	2.4
Reading for Meaning Total	45	26.1	9.3	25.0	10.2	25.1	8.2	24.8	9.6
Grand Total	115	75.4	21.0	72.1	20.8	72.0	18.7	69.4	22.6
Attitude:									
Attitude to School	9	7.5	1.9	7.8	1.4	7.5	1.4	7.6	1.5
Reading Preference	4	2.3	1.1	2.2	1.1	2.0	1.0	1.7	1.1
Math Preference	4	1.5	1.2	1.6	1.1	1.7	1.1	1.9	1.2
Social Studies Preference	4	1.6	1.3	1.8	1.3	1.7	1.3	2.0	1.3
Art Preference	4	2.9	1.3	3.0	1.2	3.2	1.1	2.7	1.4
Spelling Preference	4	1.6	0.9	1.5	1.2	1.5	1.0	1.6	1.0
Left-right Orientation	2	1.1	0.9	1.2	1.0	1.3	0.9	1.2	1.0
Scrambled Sentences	4	1.9	1.4	2.1	1.3	1.5	1.2	2.2	1.3
Individual Test Total	36	20.9	9.7	22.7	8.7	20.9	9.4	21.2	7.9
Metropolitan Achievement (raw scores)	35	23.9	7.3	23.9	7.6	24.4	7.2	23.1	8.1

TABLE I-34

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102		EC N=88		CE N=87		CC N=79	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	11.9	1.7	12.0	1.3	10.4	2.2	11.3	1.8
Vowels	6	4.9	1.5	5.1	1.3	3.7	1.5	4.5	1.4
Consonant Blends	9	7.3	2.1	7.3	1.7	5.3	2.0	6.9	1.9
Blending Total	28	24.2	5.0	24.4	3.8	19.5	4.9	22.7	4.4
Vowel Combinations	9	5.1	2.1	5.2	1.7	3.5	1.6	4.1	1.9
Consonant Digraphs	6	3.9	2.0	4.3	1.5	2.2	1.4	2.8	1.6
Controlled Vowels	4	1.8	1.3	1.9	1.2	1.2	0.9	1.5	1.0
Larger Spelling Patterns	5	3.6	1.3	3.9	1.1	2.4	1.1	2.8	1.4
Sight Words	4	2.8	1.2	2.8	1.1	1.8	1.2	2.3	1.1
Chunking Total	28	17.2	6.8	18.0	5.0	11.1	3.9	13.5	5.5
Final e	6	3.7	1.8	3.4	1.7	1.8	1.3	2.5	1.5
Double Consonants	4	1.8	1.2	1.5	1.0	1.0	0.8	1.0	0.8
Open Syllables	4	2.7	1.4	2.5	1.2	1.8	1.2	2.3	1.2
Scanning Total	14	8.1	3.6	7.4	3.1	4.7	2.0	5.8	2.6
Morphemes	10	6.9	2.1	6.8	2.2	4.9	1.8	5.7	2.1
Linear Blending	6	4.2	1.5	4.3	1.4	3.1	1.5	3.5	1.6
Syntactic Units	7	5.3	1.9	5.6	1.7	3.7	1.8	4.4	2.0
Punctuation	5	2.6	1.4	2.6	1.4	1.6	1.0	1.5	1.2
Context (Total)	9	6.0	2.6	6.7	2.0	4.0	2.0	4.9	2.5
Context (Vocabulary)	4	2.8	1.4	2.9	1.1	1.5	1.1	2.1	1.5
Context (Sentences)	4	3.0	1.3	3.2	1.1	2.0	1.1	2.4	1.4
Sentence Questions	8	5.0	2.4	5.0	2.4	2.6	1.4	3.7	2.2
Reading for Meaning Total	45	30.2	10.1	31.2	9.1	19.8	6.2	23.7	8.8
Grand Total	115	79.6	24.0	81.0	19.4	55.0	14.5	65.8	19.4
Attitude:									
Attitude to School	9	8.4	1.1	8.3	1.2	7.4	1.9	7.8	1.6
Reading Preference	4	2.2	1.0	2.2	1.0	2.1	1.1	2.3	0.9
Math Preference	4	1.5	1.0	1.6	1.1	1.4	1.1	1.2	1.0
Social Studies Preference	4	1.7	1.3	1.6	1.2	1.7	1.2	1.6	1.0
Art Preference	4	3.0	1.1	3.0	1.0	3.0	1.2	3.2	1.0
Spelling Preference	4	1.6	0.9	1.6	1.1	1.7	1.0	1.6	1.0
Left-right Orientation	2	1.9	0.4	1.9	0.2	1.8	0.5	1.9	0.5
Scrambled Sentences	4	2.4	1.2	2.4	1.4	1.3	0.9	1.7	1.4
Individual Test Total	36	22.7	8.8	20.2	8.7	12.9	7.7	17.1	9.1
Metropolitan Achievement (raw scores)	35	25.7	8.4	26.5	7.4	17.4	6.8	21.6	7.2

TABLE I-35

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=66		EC N=66		CE N=67		CC N=75	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.1	1.2	12.1	1.2	11.9	1.4	11.6	1.7
Vowels	6	5.2	1.3	5.0	1.3	5.3	1.3	5.0	1.3
Consonant Blends	9	7.4	1.8	7.3	2.0	7.8	1.7	7.3	1.9
Blending Total	28	24.7	3.9	24.5	3.8	25.0	3.9	24.0	4.3
Vowel Combinations	9	5.8	2.3	5.3	2.0	5.4	2.2	5.3	2.2
Consonant Digraphs	6	4.1	2.0	3.6	1.9	3.9	1.8	3.6	1.9
Controlled Vowels	4	2.1	1.2	2.0	1.3	2.0	1.2	1.9	1.4
Larger Spelling Patterns	5	3.6	1.3	3.4	1.6	3.6	1.4	3.2	1.6
Sight Words	4	2.7	1.2	2.7	1.2	2.7	1.1	2.5	1.2
Chunking Total	28	18.3	6.5	17.0	6.6	17.6	6.2	16.4	7.2
Final e	6	3.7	1.8	3.4	1.8	3.6	1.8	3.2	1.8
Double Consonants	4	1.6	1.0	1.5	1.0	1.5	0.8	1.4	1.0
Open Syllables	4	2.8	1.1	2.8	1.1	2.9	1.3	2.7	1.4
Scanning Total	14	8.2	3.2	7.7	3.1	8.0	3.2	7.3	3.4
Morphemes	10	6.7	2.3	6.7	2.4	6.6	2.1	6.3	2.4
Linear Blending	6	4.1	1.7	3.9	1.7	4.1	1.6	3.7	1.9
Syntactic Units	7	5.0	2.0	5.0	2.1	5.2	1.6	4.6	2.1
Punctuation	5	2.2	1.2	2.0	1.3	2.0	1.4	2.2	1.2
Context (Total)	9	6.3	2.5	6.3	2.4	6.6	2.1	5.9	2.4
Context (Vocabulary)	4	2.7	1.5	2.7	1.3	2.8	1.2	2.5	1.2
Context (Sentences)	4	3.1	1.2	3.1	1.3	3.0	1.2	2.9	1.3
Sentence Questions	8	4.9	2.7	4.3	2.7	4.6	2.5	4.4	2.7
Reading for Meaning Total	45	29.2	10.6	28.2	10.8	29.1	9.1	27.0	10.6
Grand Total	115	80.5	22.7	77.4	22.7	79.7	20.8	74.7	23.8
Attitude:									
Attitude to School	9	7.8	1.7	7.8	1.7	7.5	2.1	7.8	1.7
Reading Preference	4	2.2	1.0	1.8	1.1	1.9	1.0	1.9	1.0
Math Preference	4	1.4	1.0	1.8	1.1	1.6	1.1	1.8	1.2
Social Studies Preference	4	1.5	1.3	1.4	1.2	1.7	1.3	1.6	1.3
Art Preference	4	3.2	1.1	3.2	1.1	3.3	1.0	2.9	1.4
Spelling Preference	4	1.6	1.0	1.7	1.0	1.6	1.1	1.8	1.1
Left-right Orientation	2	1.8	0.4	1.6	0.7	1.9	0.3	1.9	0.5
Scrambled Sentences	4	2.3	1.3	2.7	1.3	2.2	1.4	2.3	1.2
Individual Test Total	36	22.6	11.2	24.9	7.5	22.5	9.9	24.1	7.6
Metropolitan Achievement (raw scores)	35	26.1	7.7	25.6	7.4	26.6	7.0	24.2	8.0

TABLE I-36

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102 M	EE N=102 SD	EC N=88 M	EC N=88 SD	CE N=87 M	CE N=87 SD	CC N=79 M	CC N=79 SD
Consonants	13	11.8	1.7	12.2	1.2	10.7	1.9	11.4	1.4
Vowels	6	5.2	1.3	5.2	1.3	4.3	1.4	4.8	1.5
Consonant Blends	9	7.2	2.1	7.2	1.9	5.2	1.9	6.8	2.2
Blending Total	28	24.3	4.6	24.6	3.9	20.1	4.5	23.0	4.6
Vowel Combinations	9	5.3	2.3	5.6	2.0	3.5	1.6	4.8	2.1
Consonant Digraphs	6	4.2	1.8	4.6	1.5	2.3	1.3	3.2	1.8
Controlled Vowels	4	2.1	1.3	2.1	1.4	1.3	1.0	1.6	1.3
Larger Spelling Patterns	5	3.8	1.4	3.9	1.2	2.8	1.3	3.2	1.3
Sight Words	4	3.0	1.2	3.0	1.0	2.1	0.9	2.5	1.1
Chunking Total	28	18.4	6.9	19.2	6.0	12.2	4.1	15.3	6.2
Final e	6	3.6	1.9	3.6	1.8	2.0	1.4	2.7	1.7
Double Consonants	4	1.4	1.0	1.5	0.9	1.1	0.8	1.3	1.0
Open Syllables	4	2.9	1.1	3.0	1.1	2.1	1.2	2.5	1.3
Scanning Total	14	8.0	3.3	8.1	3.0	5.2	2.5	6.6	3.1
Morphemes	10	7.0	2.5	7.3	1.8	5.3	1.9	6.3	2.5
Linear Blending	6	4.5	1.4	4.6	1.6	3.2	1.5	3.8	1.6
Syntactic Units	7	5.3	1.9	5.9	1.5	3.7	1.9	4.8	2.0
Punctuation	5	2.5	1.3	2.5	1.4	1.7	1.1	2.0	1.3
Context (Total)	9	6.5	2.5	7.0	2.1	4.6	2.3	5.5	2.7
Context (Vocabulary)	4	2.9	1.2	3.1	1.3	1.9	1.1	2.7	1.3
Context (Sentences)	4	3.1	1.2	3.4	1.0	2.2	1.3	2.6	1.3
Sentence Questions	8	5.1	2.7	5.6	2.5	3.1	1.9	4.5	2.4
Reading for Meaning Total	45	31.0	10.9	32.8	8.7	21.6	7.7	26.9	10.3
Grand Total	115	81.7	24.3	84.7	20.3	59.1	16.2	71.8	22.4
Attitude:									
Attitude to School	9	7.9	1.4	8.0	1.4	7.6	1.6	7.7	1.7
Reading Preference	4	1.8	1.0	1.9	1.0	1.9	1.0	1.9	1.0
Math Preference	4	1.5	1.1	1.7	1.0	1.5	1.1	1.6	1.2
Social Studies Preference	4	1.8	1.3	1.5	1.2	1.8	1.3	1.6	1.2
Art Preference	4	3.2	1.2	3.3	1.1	3.2	1.2	3.4	0.9
Spelling Preference	4	1.6	1.0	1.5	1.2	1.6	1.1	1.6	1.0
Left-right Orientation	2	1.9	0.3	2.0	0.0	2.0	0.0	1.6	0.8
Scrambled Sentences	4	2.6	1.2	2.7	1.5	1.4	1.1	1.9	1.5
Individual Test Total	36	22.9	8.2	22.6	7.5	14.3	4.7	20.1	10.7
Metropolitan Achievement (raw scores)	35	26.5	7.8	27.6	6.9	18.9	6.4	23.5	8.0

TABLE I-37

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for First-Second Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=66 M	 SD	EC N=66 M	 SD	CE N=67 M	 SD	CC N=75 M	 SD
Consonants	13	12.6	0.9	12.3	1.0	12.6	0.9	12.4	1.2
Vowels	6	5.7	0.8	5.7	0.6	5.6	1.0	5.4	1.2
Consonant Blends	9	8.3	1.2	8.3	1.2	8.1	1.5	8.0	1.6
Blending Total	28	26.6	2.6	26.3	2.3	26.2	2.7	25.8	3.7
Vowel Combinations	9	6.9	2.2	6.8	1.8	7.0	2.1	6.7	2.0
Consonant Digraphs	6	5.1	1.6	4.9	1.4	5.2	1.3	4.7	1.5
Controlled Vowels	4	2.7	1.3	2.7	1.3	3.0	1.1	2.6	1.3
Larger Spelling Patterns	5	4.3	1.0	4.2	1.2	4.4	1.0	4.1	1.1
Sight Words	4	3.4	1.0	3.3	1.0	3.5	0.8	3.2	1.0
Chunking Total	28	22.4	6.1	21.9	5.7	23.1	5.5	21.3	5.9
Final e	6	4.7	1.8	4.3	1.7	4.5	1.7	4.4	1.7
Double Consonants	4	1.9	1.1	1.7	1.1	1.9	1.0	1.9	1.0
Open Syllables	4	3.3	1.1	3.2	1.0	3.4	0.8	3.2	1.2
Scanning Total	14	9.9	3.3	9.2	3.0	9.8	2.9	9.5	3.2
Morphemes	10	7.8	1.9	8.0	1.9	7.7	1.8	8.0	1.9
Linear Blending	6	5.0	1.4	4.9	1.5	5.0	1.4	4.9	1.3
Syntactic Units	7	5.9	1.5	5.9	1.5	6.0	1.6	5.8	1.8
Punctuation	5	2.8	1.4	2.5	1.4	3.1	1.5	2.7	1.4
Context (Total)	9	7.6	2.1	7.5	1.9	7.7	2.0	7.2	2.2
Context (Vocabulary)	4	3.4	1.0	3.3	1.1	3.4	1.0	3.1	1.3
Context (Sentences)	4	3.6	1.0	3.6	0.9	3.6	1.0	3.5	1.0
Sentence Questions	8	6.4	2.1	6.3	2.2	6.6	2.1	6.2	2.2
Reading for Meaning Total	45	35.6	8.7	35.1	8.5	36.0	8.6	34.8	8.8
Grand Total	115	94.5	19.7	92.6	18.2	95.1	18.7	91.3	20.1
Attitude:									
Attitude to School	9	7.9	1.9	7.8	1.4	7.2	2.3	7.9	1.5
Reading Preference	4	2.0	1.0	1.9	1.0	1.9	1.1	1.9	1.0
Math Preference	4	1.6	1.2	1.7	1.2	1.5	1.2	1.7	1.4
Social Studies Preference	4	1.7	1.2	1.7	1.3	1.7	1.3	1.6	1.3
Art Preference	4	3.4	1.1	3.2	1.2	3.2	1.2	3.2	1.2
Spelling Preference	4	1.4	0.9	1.5	1.0	1.7	1.1	1.5	1.1
Left-right Orientation	2	1.9	0.3	2.0	0.0	1.8	0.4	1.9	0.3
Scrambled Sentences	4	2.9	1.4	3.4	0.9	3.3	1.0	3.4	1.0
Individual Test Total	36	26.9	9.9	29.7	5.2	28.9	6.0	29.2	4.7
Metropolitan Achievement (raw scores)	40	25.7	10.1	25.7	9.2	26.2	9.2	25.8	9.8

TABLE I-38

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 First-Second Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102 M	SD	EC N=88 M	SD	CE N=87 M	SD	CC N=79 M	SD
Consonants	13	12.5	1.1	12.7	0.7	12.4	1.4	12.4	0.8
Vowels	6	5.6	0.8	5.8	0.6	5.1	1.3	5.7	0.8
Consonant Blends	9	8.1	1.6	8.3	1.1	7.2	1.6	8.0	1.6
Blending Total	28	26.2	3.2	26.8	1.8	24.7	3.6	26.1	2.8
Vowel Combinations	9	7.0	1.8	7.4	1.6	5.6	2.0	6.5	2.0
Consonant Digraphs	6	5.4	1.1	5.4	1.0	4.3	1.5	4.9	1.3
Controlled Vowels	4	3.0	1.2	3.1	1.1	2.1	1.3	2.8	1.2
Larger Spelling Patterns	5	4.4	1.0	4.5	0.8	3.9	1.2	4.3	1.1
Sight Words	4	3.6	0.8	3.7	0.6	3.0	1.0	3.4	0.9
Chunking Total	28	23.4	5.0	24.1	4.2	18.9	5.7	22.0	5.6
Final e	6	4.8	1.7	4.9	1.2	3.7	1.7	4.4	1.6
Double Consonants	4	2.2	1.2	2.2	1.1	1.6	1.0	1.9	0.9
Open Syllables	4	3.5	0.8	3.5	0.8	2.9	1.1	3.2	0.9
Scanning Total	14	10.5	3.0	10.6	2.5	8.3	3.1	9.5	2.7
Morphemes	10	8.2	1.9	8.5	1.3	7.3	1.9	8.0	1.7
Linear Blending	6	5.3	1.0	5.3	1.1	4.4	1.5	5.0	1.4
Syntactic Units	7	6.3	1.3	6.5	1.0	5.4	1.7	6.1	1.5
Punctuation	5	3.4	1.4	3.6	1.2	2.8	1.3	2.9	1.5
Context (Total)	9	7.7	1.8	8.1	1.5	6.5	2.5	7.4	1.9
Context (Vocabulary)	4	3.6	0.9	3.6	0.9	2.8	1.2	3.3	1.1
Context (Sentences)	4	3.6	0.9	3.7	0.8	3.1	1.3	3.5	0.9
Sentence Questions	8	6.8	2.0	7.2	1.5	5.6	2.2	6.6	2.0
Reading for Meaning Total	45	37.7	8.0	39.1	6.0	32.0	8.9	35.9	7.9
Grand Total	115	97.9	18.1	100.6	13.5	83.8	19.5	93.5	17.5
Attitude:									
Attitude to School	9	8.0	1.6	8.1	1.5	7.7	1.8	8.1	1.5
Reading Preference	4	2.0	1.0	2.0	1.1	1.8	1.0	2.1	1.1
Math Preference	4	1.4	1.1	1.7	1.1	1.4	1.1	1.6	1.1
Social Studies Preference	4	1.7	1.2	1.5	1.2	1.9	1.2	1.6	1.0
Art Preference	4	3.5	0.9	3.3	1.0	3.4	0.9	3.3	1.1
Spelling Preference	4	1.4	0.9	1.5	1.0	1.5	1.0	1.4	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	1.9	0.3	2.0	0.0
Scrambled Sentences	4	3.5	0.8	3.8	0.5	2.7	1.5	3.2	1.1
Individual Test Total	36	29.9	5.3	30.3	6.5	23.6	5.3	28.1	6.5
Metropolitan Achievement (raw scores)	40	28.6	9.2	29.8	7.9	20.7	8.1	25.8	8.8

TABLE I-39

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102		EC N=56		CE N=74		CC N=98	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	11.1	1.5	11.8	1.1	11.3	1.7	11.2	1.5
Vowels	6	4.7	1.4	4.8	1.3	4.6	1.6	4.3	1.6
Consonant Blends	9	6.5	2.0	7.2	1.8	6.7	2.2	6.4	2.0
Blending Total	28	22.3	4.2	23.8	3.6	22.5	4.8	21.8	4.4
Vowel Combinations	9	4.4	1.8	4.5	1.8	4.2	2.2	4.5	2.2
Consonant Digraphs	6	2.5	1.5	2.8	1.9	2.9	2.0	2.4	1.8
Controlled Vowels	4	1.4	1.0	1.6	1.2	1.7	1.3	1.5	1.2
Larger Spelling Patterns	5	2.8	1.4	3.0	1.3	2.8	1.5	2.5	1.5
Sight Words	4	2.0	1.0	2.2	1.2	2.1	1.2	1.8	1.1
Chunking Total	28	13.1	4.9	14.1	6.0	13.7	6.7	12.8	6.3
Final e	6	2.3	1.6	2.5	1.6	2.5	1.6	2.6	1.6
Double Consonants	4	1.2	1.0	1.3	0.9	1.4	0.9	1.2	0.9
Open Syllables	4	2.5	1.0	2.7	1.1	2.3	1.3	2.3	1.2
Scanning Total	14	6.0	2.8	6.6	2.6	6.2	3.0	6.2	3.0
Morphemes	10	5.1	1.9	5.6	2.2	5.6	2.2	5.1	2.5
Linear Blending	6	3.0	1.5	3.5	1.5	3.2	1.8	2.8	1.8
Syntactic Units	7	4.3	1.8	4.8	1.9	3.7	2.3	3.6	2.2
Punctuation	5	1.5	1.1	1.8	1.0	1.6	1.0	1.5	1.0
Context (Total)	9	5.0	2.4	5.5	2.3	4.9	2.6	4.8	2.6
Context (Vocabulary)	4	1.9	1.2	2.4	1.2	2.0	1.4	1.8	1.3
Context (Sentences)	4	2.4	1.3	2.9	1.2	2.4	1.4	2.2	1.4
Sentence Questions	8	3.2	2.2	4.0	2.3	3.3	2.5	3.3	2.5
Reading for Meaning Total	45	22.0	8.2	25.1	9.0	22.3	10.0	21.0	10.4
Grand Total	115	63.5	17.3	69.6	19.3	64.7	22.1	61.8	22.5
Attitude:									
Attitude to School	9	7.4	1.7	7.5	1.7	7.1	2.1	7.5	1.5
Reading Preference	4	2.4	1.1	1.7	1.1	1.9	1.0	2.1	1.1
Math Preference	4	1.6	1.2	1.7	1.1	1.6	1.1	1.7	1.1
Social Studies Preference	4	1.4	1.2	1.6	1.3	1.5	1.3	1.6	1.3
Art Preference	4	2.8	1.3	3.2	1.2	3.1	1.0	2.8	1.3
Spelling Preference	4	1.9	1.0	1.7	1.1	1.8	1.1	1.9	1.0
Left-right Orientation	2	1.8	0.5	2.0	0.0	1.9	0.3	1.7	2.2
Scrambled Sentences	4	1.8	1.2	2.2	1.3	2.1	1.3	2.0	1.5
Individual Test Total	36	19.0	9.6	25.6	6.0	23.2	9.3	20.7	9.9
Metropolitan Achievement (raw scores)	35	23.4	6.9	25.3	7.4	22.7	8.3	21.5	8.2

TABLE I-40

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=219 M	SD	EC N=182 M	SD	CE N=198 M	SD	CC N=214 M	SD
Consonants	13	11.8	1.4	11.6	1.3	11.4	1.7	11.3	1.5
Vowels	6	5.1	1.3	4.9	1.3	4.7	1.5	4.7	1.4
Consonant Blends	9	7.2	1.8	6.8	1.9	6.8	1.9	6.7	1.9
Blending Total	28	24.1	3.9	23.2	3.8	22.8	4.3	22.7	4.0
Vowel Combinations	9	5.0	1.8	4.8	1.8	4.7	1.9	4.4	1.9
Consonant Digraphs	6	3.6	1.7	3.3	1.6	3.1	1.8	2.9	1.6
Controlled Vowels	4	1.7	1.1	1.6	1.2	1.5	1.1	1.4	1.1
Larger Spelling Patterns	5	3.5	1.3	3.3	1.3	3.1	1.4	3.1	1.3
Sight Words	4	2.7	1.0	2.7	1.0	2.5	1.1	2.5	1.0
Chunking Total	28	16.6	5.4	15.6	5.4	14.9	5.9	14.4	5.2
Final e	6	2.9	1.7	2.7	1.6	2.7	1.8	2.3	1.7
Double Consonants	4	1.3	0.9	1.3	1.0	1.3	1.0	1.2	1.0
Open Syllables	4	2.6	1.1	2.5	1.2	2.3	1.2	2.3	1.2
Scanning Total	14	6.8	2.8	6.5	2.8	6.3	3.1	5.9	2.8
Morphemes	10	6.6	2.2	6.3	2.2	6.0	2.3	5.8	2.1
Linear Blending	6	4.2	1.4	3.9	1.5	3.9	1.5	3.9	1.4
Syntactic Units	7	5.3	1.8	4.7	1.8	4.5	2.1	4.5	2.0
Punctuation	5	2.1	1.2	1.9	1.3	1.9	1.1	1.8	1.2
Context (Total)	9	6.2	2.3	5.7	2.2	5.2	2.5	5.3	2.3
Context (Vocabulary)	4	2.6	1.2	2.4	1.3	2.4	1.3	2.4	1.2
Context (Sentences)	4	3.0	1.1	2.7	1.2	2.4	1.3	2.5	1.3
Sentence Questions	8	4.7	2.5	3.9	2.3	3.9	2.4	3.5	2.4
Reading for Meaning Total	45	29.0	9.1	26.5	8.8	25.3	9.7	24.9	8.9
Grand Total	115	76.5	19.4	71.8	18.7	69.3	21.2	67.8	19.1
Attitude:									
Attitude to School	9	8.0	1.4	8.1	1.2	7.9	1.6	7.7	1.6
Reading Preference	4	2.1	1.1	1.9	1.1	2.0	1.0	2.1	1.0
Math Preference	4	1.5	1.2	1.6	1.1	1.5	1.1	1.5	1.1
Social Studies Preference	4	1.7	1.1	1.5	1.1	1.6	1.1	1.7	1.2
Art Preference	4	3.1	1.2	3.1	1.2	3.2	1.2	3.2	1.1
Spelling Preference	4	1.5	1.1	1.9	1.1	1.7	1.1	1.5	1.1
Left-right Orientation	2	2.0	0.0	1.9	0.4	1.9	0.4	1.9	0.4
Scrambled Sentences	4	2.7	1.2	2.3	1.3	2.1	1.4	2.2	1.2
Individual Test Total	36	25.7	6.4	23.2	8.2	22.3	9.7	19.3	8.3
Metropolitan Achievement (raw scores)	35	26.5	6.8	24.9	7.2	24.6	7.5	23.6	7.1

TABLE I-41

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102 M	EE N=102 SD	EC N=56 M	EC N=56 SD	CE N=74 M	CE N=74 SD	CC N=98 M	CC N=98 SD
Consonants	13	12.6	0.7	12.7	0.6	12.1	1.1	12.3	1.0
Vowels	6	5.8	0.6	5.8	0.7	5.4	1.1	5.3	1.1
Consonant Blends	9	8.5	1.1	8.1	1.4	8.1	1.5	7.6	1.6
Blending Total	28	26.8	2.2	26.6	2.2	25.6	3.2	25.2	3.2
Vowel Combinations	9	6.9	1.8	6.6	1.9	6.1	2.0	5.7	2.0
Consonant Digraphs	6	5.2	1.2	4.9	1.4	4.3	1.7	3.9	1.8
Controlled Vowels	4	2.7	1.1	2.7	1.0	2.4	1.3	2.1	1.3
Larger Spelling Patterns	5	4.4	0.9	4.3	0.9	3.8	1.4	3.6	1.4
Sight Words	4	3.3	0.9	3.4	0.8	2.9	1.1	3.0	1.1
Chunking Total	28	22.6	4.8	21.9	5.0	19.5	6.2	18.3	6.3
Final e	6	4.7	1.6	4.7	1.6	4.0	1.8	3.5	1.8
Double Consonants	4	1.9	1.0	2.2	1.2	1.7	1.1	1.5	1.1
Open Syllables	4	3.3	0.9	3.4	0.9	3.2	1.0	2.9	1.0
Scanning Total	14	9.9	2.8	10.3	2.7	8.9	3.0	7.9	3.2
Morphemes	10	7.9	1.7	8.2	1.8	7.4	2.1	7.0	2.2
Linear Blending	6	5.0	1.2	4.9	1.2	4.5	1.6	4.3	1.5
Syntactic Units	7	6.1	1.3	6.2	1.4	5.6	1.7	5.4	1.7
Punctuation	5	2.9	1.4	2.9	1.3	2.3	1.2	2.3	1.4
Context (Total)	9	7.5	1.7	7.4	1.7	6.8	2.1	6.7	2.3
Context (Vocabulary)	4	3.3	0.9	3.4	0.9	3.1	1.2	2.9	1.2
Context (Sentences)	4	3.6	0.8	3.6	0.7	3.4	1.1	3.2	1.2
Sentence Questions	8	6.5	1.9	6.4	2.0	5.7	2.5	5.3	2.5
Reading for Meaning Total	45	35.8	7.2	36.0	7.6	32.3	9.4	31.0	9.6
Grand Total	115	95.1	15.7	94.8	16.1	86.3	20.3	82.3	20.8
Attitude:									
Attitude to School	9	7.5	1.8	7.8	1.5	7.4	2.0	7.8	1.5
Reading Preference	4	1.8	1.1	1.8	1.1	2.0	1.1	2.1	1.0
Math Preference	4	1.7	1.2	1.9	1.3	1.7	1.2	1.8	1.3
Social Studies Preference	4	1.7	1.3	1.3	1.1	1.2	1.3	1.6	1.2
Art Preference	4	3.4	0.9	3.4	0.9	3.3	1.0	2.8	1.4
Spelling Preference	4	1.4	1.0	1.5	1.1	1.7	1.1	1.7	1.0
Left-right Orientation	2	1.6	0.8	1.8	0.6	1.7	0.6	1.9	0.4
Scrambled Sentences	4	3.2	1.2	3.7	0.6	3.0	1.4	2.4	1.5
Individual Test Total	36	30.9	4.3	30.7	3.6	29.7	5.9	25.1	7.4
Metropolitan Achievement (raw scores)	40	25.2	9.4	25.3	9.4	21.2	9.4	20.4	9.4

TABLE I-42

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

		EE		EC		CE		CC	
		N=219		N=182		N=198		N=214	
Test and Subtest	No. of Items	M	SD	M	SD	M	SD	M	SD
Consonants	13	12.6	0.7	12.4	1.0	12.3	1.0	12.3	0.9
Vowels	6	5.8	0.5	5.7	0.6	5.7	0.7	5.6	0.7
Consonant Blends	9	8.2	1.1	8.2	1.2	7.9	1.6	8.0	1.3
Blending Total	28	26.7	1.8	26.4	2.3	26.0	2.7	25.9	2.4
Vowel Combinations	9	7.0	1.9	6.8	1.8	6.4	2.0	6.0	1.8
Consonant Digraphs	6	5.4	1.0	5.2	1.2	4.6	1.5	4.5	1.5
Controlled Vowels	4	2.9	1.1	2.8	1.2	2.6	1.2	2.4	1.2
Larger Spelling Patterns	5	4.5	0.9	4.5	0.9	4.2	1.1	4.1	1.1
Sight Words	4	3.5	0.8	3.4	0.9	3.3	0.9	3.2	0.9
Chunking Total	28	23.2	4.4	22.5	5.0	21.1	5.5	20.1	5.2
Final e	6	4.7	1.4	4.7	1.4	4.2	1.6	4.1	1.6
Double Consonants	4	2.1	1.2	2.1	1.3	1.9	1.1	1.8	1.1
Open Syllables	4	3.5	0.8	3.5	0.9	3.4	0.9	3.3	0.9
Scanning Total	14	10.3	2.6	10.3	2.8	9.5	2.9	9.2	2.8
Morphemes	10	8.3	1.4	8.0	1.6	7.7	1.7	7.7	1.5
Linear Blending	6	5.3	1.0	5.1	1.2	4.8	1.3	4.8	1.3
Syntactic Units	7	6.4	1.0	6.3	1.3	5.9	1.5	5.9	1.6
Punctuation	5	3.4	1.3	3.3	1.4	2.5	1.4	2.5	1.4
Context (Total)	9	7.9	1.6	7.7	1.5	7.4	1.8	7.3	1.8
Context (Vocabulary)	4	3.5	0.8	3.5	0.9	3.2	1.1	3.1	1.0
Context (Sentences)	4	3.7	0.8	3.7	0.7	3.5	1.0	3.4	1.0
Sentence Questions	8	7.0	1.7	6.7	1.8	6.3	2.0	6.0	2.3
Reading for Meaning Total	45	38.2	6.3	37.0	7.0	34.6	7.8	34.2	7.6
Grand Total	115	98.5	13.7	96.2	15.9	91.2	17.4	89.4	16.5
Attitude:									
Attitude to School	9	8.0	1.7	8.1	1.6	8.0	1.8	7.8	1.7
Reading Preference	4	2.0	1.1	1.8	1.0	2.0	1.0	2.0	0.9
Math Preference	4	1.6	1.2	1.8	1.2	1.6	1.1	1.4	1.2
Social Studies Preference	4	1.7	1.1	1.5	1.2	1.6	1.2	1.7	1.2
Art Preference	4	3.2	1.2	3.1	1.4	3.3	1.2	3.4	1.0
Spelling Preference	4	1.5	1.1	1.8	1.1	1.5	1.1	1.4	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	1.9	0.2	2.0	0.0
Scrambled Sentences	4	3.6	0.6	3.5	0.9	3.2	1.0	2.9	1.1
Individual Test Total	36	30.0	5.0	29.6	5.5	27.5	6.8	25.7	6.1
Metropolitan Achievement (raw scores)	40	27.8	8.2	25.8	9.0	24.9	9.3	24.1	8.1

TABLE I-43

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102		EC N=56		CE N=74		CC N=98	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.6	0.8	12.6	0.6	12.4	0.9	12.2	1.0
Vowels	6	5.6	0.8	5.7	0.6	5.5	1.0	5.5	0.9
Consonant Blends	9	8.4	1.1	8.4	1.2	8.0	1.5	8.1	1.4
Blending Total	28	26.6	2.3	26.7	1.9	25.8	3.0	25.8	2.9
Vowel Combinations	9	7.0	1.7	7.1	1.7	6.3	2.3	6.0	2.2
Consonant Digraphs	6	5.2	1.3	5.1	1.1	4.3	1.8	4.0	1.8
Controlled Vowels	4	2.8	1.1	2.8	1.0	2.7	1.1	2.3	1.2
Larger Spelling Patterns	5	4.3	1.0	4.4	1.1	3.9	1.4	3.7	1.5
Sight Words	4	3.5	0.8	3.6	0.7	3.1	1.1	3.1	1.0
Chunking Total	28	22.7	5.0	22.9	4.6	20.3	6.5	19.0	6.4
Final e	6	4.7	1.5	4.8	1.4	4.0	1.7	3.8	1.9
Double Consonants	4	2.0	1.0	1.8	1.2	1.6	1.2	1.6	1.0
Open Syllables	4	3.5	0.7	3.7	0.6	3.2	1.0	3.0	1.0
Scanning Total	14	10.2	2.5	10.3	2.7	8.8	3.2	8.4	3.2
Morphemes	10	8.0	1.7	8.3	1.4	7.5	1.8	7.3	2.1
Linear Blending	6	5.1	1.2	5.2	1.1	4.8	1.3	4.6	1.4
Syntactic Units	7	6.3	1.3	6.5	0.9	5.7	1.9	5.7	1.6
Punctuation	5	3.0	1.3	3.0	1.6	2.7	1.4	2.5	1.4
Context (Total)	9	7.8	1.5	8.0	1.6	7.3	2.1	7.0	2.2
Context (Vocabulary)	4	3.4	1.0	3.5	0.9	3.3	1.1	3.1	1.2
Context (Sentences)	4	3.7	0.8	3.8	0.7	3.5	1.0	3.3	1.1
Sentence Questions	8	6.7	2.0	6.9	1.8	6.0	2.6	5.7	2.5
Reading for Meaning Total	45	37.0	7.0	37.8	6.3	34.0	9.6	32.8	9.3
Grand Total	115	96.6	15.0	97.8	14.1	88.9	21.2	85.9	20.5
Attitude:									
Attitude to Reading	9	7.8	1.5	8.2	1.4	7.4	1.8	8.0	1.5
Reading Preference	4	1.7	1.0	1.8	1.0	1.9	1.1	1.9	1.0
Math Preference	4	1.5	1.2	1.7	1.2	1.4	1.2	1.6	1.3
Social Studies Preference	4	1.6	1.3	1.7	1.4	1.7	1.3	1.8	1.3
Art Preference	4	3.4	1.2	3.3	1.2	3.2	1.3	3.0	1.4
Spelling Preference	4	1.8	1.0	1.6	1.0	1.6	1.0	1.6	1.0
Left-right Orientation	2	2.0	0.0	1.9	0.5	2.0	0.0	1.8	0.6
Scrambled Sentences	4	3.8	0.7	3.6	0.9	3.7	0.6	3.1	1.3
Individual Test Total	36	31.0	4.0	29.7	5.6	32.3	4.7	25.9	8.4
Metropolitan Achievement (raw scores)	40	27.6	9.3	28.0	8.6	24.8	9.9	23.4	10.2

TABLE I-44

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=219		EC N=182		CE N=198		CC N=214	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.5	0.7	12.4	0.9	12.3	1.0	12.3	1.1
Vowels	6	5.8	0.5	5.7	0.7	5.6	0.8	5.6	0.7
Consonant Blends	9	8.2	1.3	7.9	1.4	8.0	1.5	7.9	1.5
Blending Total	28	26.5	2.1	26.0	2.5	25.9	2.8	25.8	2.8
Vowel Combinations	9	7.2	1.6	7.1	1.7	6.4	1.9	6.5	1.7
Consonant Digraphs	6	5.4	1.1	5.3	1.1	4.8	1.5	4.7	1.4
Controlled Vowels	4	3.1	1.0	2.9	1.1	2.7	1.3	2.5	1.2
Larger Spelling Patterns	5	4.5	0.8	4.3	1.0	4.2	1.1	4.2	1.0
Sight Words	4	3.6	0.8	3.5	0.9	3.3	0.9	3.2	0.9
Chunking Total	28	23.8	4.2	23.0	4.8	21.4	5.6	21.1	5.0
Final e	6	4.9	1.2	4.6	1.4	4.3	1.6	4.2	1.5
Double Consonants	4	2.2	1.2	2.0	1.1	1.9	1.2	1.9	1.0
Open Syllables	4	3.6	0.7	3.4	0.9	3.3	0.9	3.4	0.9
Scanning Total	14	10.7	2.5	10.1	2.6	9.5	3.0	9.5	2.6
Morphemes	10	8.3	1.3	8.1	1.5	7.7	1.8	7.8	1.6
Linear Blending	6	5.4	0.9	5.1	1.2	5.0	1.4	5.0	1.2
Syntactic Units	7	6.5	1.1	6.2	1.3	6.1	1.4	6.1	1.3
Punctuation	5	3.4	1.4	3.2	1.3	2.7	1.4	2.7	1.4
Context (Total)	9	8.1	1.2	7.8	1.7	7.6	1.8	7.4	1.9
Context (Vocabulary)	4	3.6	0.7	3.5	0.9	3.3	1.0	3.3	1.0
Context (Sentences)	4	3.8	0.5	3.7	0.7	3.5	1.0	3.5	0.9
Sentence Questions	8	7.2	1.5	6.6	2.0	6.4	2.2	6.4	2.1
Reading for Meaning Total	45	38.9	5.6	37.1	7.3	35.4	8.0	35.3	7.7
Grand Total	115	100.0	13.1	96.2	15.9	92.2	17.8	91.8	16.5
Attitude:									
Attitude to School	9	7.7	2.0	7.7	1.8	7.8	1.9	7.7	1.9
Reading Preference	4	2.0	1.1	1.7	1.0	1.7	1.0	1.9	1.0
Math Preference	4	1.5	1.3	1.7	1.2	1.8	1.2	1.4	1.2
Social Studies Preference	4	1.8	1.1	1.4	1.1	1.6	1.1	1.7	1.1
Art Preference	4	3.2	1.3	3.3	1.1	3.4	1.0	3.5	1.0
Spelling Preference	4	1.5	1.0	1.8	1.1	1.5	1.0	1.4	1.0
Left-right Orientation	2	2.0	0.1	2.0	0.1	2.0	0.2	2.0	0.1
Scrambled Sentences	4	3.4	0.8	3.4	0.9	3.1	1.0	3.1	1.0
Individual Test Total	36	29.1	5.2	29.4	5.5	27.9	6.9	26.3	6.3
Metropolitan Achievement (raw scores)	40	29.3	8.2	27.0	8.7	26.3	9.7	25.2	8.3

TABLE I-45

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Follow-up Children in Fresno (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=102 M	 SD	EC N=56 M	 SD	CE N=74 M	 SD	CC N=98 M	 SD
Consonants	13	12.8	0.5	12.8	0.5	12.7	0.7	12.4	1.2
Vowels	6	5.9	0.4	5.8	0.6	5.7	0.6	5.6	0.9
Consonant Blends	9	8.7	0.7	8.6	0.9	8.4	1.2	8.2	1.3
Blending Total	28	27.4	1.1	27.3	1.8	26.8	2.1	26.2	2.9
Vowel Combinations	9	7.7	1.5	7.7	1.6	7.1	1.9	6.8	2.0
Consonant Digraphs	6	5.5	1.0	5.6	0.8	5.1	1.2	4.9	1.4
Controlled Vowels	4	3.3	1.0	3.4	0.9	3.0	1.3	2.8	1.1
Larger Spelling Patterns	5	4.6	0.7	4.7	0.7	4.4	1.1	4.2	1.0
Sight Words	4	3.8	0.5	3.8	0.6	3.6	0.7	3.4	0.9
Chunking Total	28	24.9	3.8	25.2	3.9	23.2	5.5	22.2	5.4
Final e	6	5.1	1.2	5.3	1.1	4.7	1.5	4.4	1.7
Double Consonants	4	2.1	1.1	2.1	1.1	2.1	1.2	1.9	1.1
Open Syllables	4	3.6	0.6	3.7	0.7	3.5	0.8	3.3	1.0
Scanning Total	14	10.9	2.2	11.1	2.1	10.3	2.8	9.7	3.0
Morphemes	10	8.6	1.2	8.8	1.2	8.1	1.7	8.1	1.8
Linear Blending	6	5.5	0.9	5.5	0.9	5.3	1.1	5.2	1.3
Syntactic Units	7	6.6	0.8	6.6	1.0	6.2	1.4	6.3	1.3
Punctuation	5	3.7	1.1	3.7	1.2	3.5	1.3	3.3	1.2
Context (Total)	9	8.4	1.0	8.4	1.1	7.9	1.8	7.8	1.9
Context (Vocabulary)	4	3.8	0.6	3.8	0.8	3.6	1.0	3.4	1.0
Context (Sentences)	4	3.8	0.5	3.9	0.3	3.6	0.9	3.6	1.0
Sentence Questions	8	7.2	1.6	7.6	1.3	6.8	2.0	6.8	2.1
Reading for Meaning Total	45	40.0	5.0	40.6	5.3	37.8	7.8	37.4	7.9
Grand Total	115	103.2	11.2	104.1	12.0	98.1	17.1	95.4	17.5
Attitude:									
Attitude to School	9	7.9	1.8	7.9	1.4	7.3	1.9	8.0	1.6
Reading Preference	4	1.9	0.9	1.9	1.2	1.7	1.1	2.0	1.0
Math Preference	4	1.5	1.4	1.8	1.3	1.8	1.2	1.7	1.2
Social Studies Preference	4	1.6	1.3	1.5	1.1	1.3	1.3	1.4	1.2
Art Preference	4	3.2	1.3	3.3	1.2	3.4	1.0	3.1	1.2
Spelling Preference	4	1.7	1.1	1.6	1.1	1.8	1.1	1.7	1.1
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.2
Scrambled Sentences	4	3.8	0.5	3.9	0.3	3.6	0.6	3.5	0.9
Individual Test Total	36	31.7	2.8	31.1	3.2	31.7	4.3	29.5	4.1
Metropolitan Achievement (raw scores)	50	25.3	9.8	26.7	10.5	24.8	10.4	23.0	10.8

TABLE I-46

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Follow-up Children in Youngstown (by Year 1 and Year 2 Treatment Groups)

Test and Subtest	No. of Items	EE N=219 M	EE N=219 SD	EC N=182 M	EC N=182 SD	CE N=198 M	CE N=198 SD	CC N=214 M	CC N=214 SD
Consonants	13	12.8	0.5	12.6	0.8	12.7	0.7	12.6	0.6
Vowels	6	5.9	0.4	5.8	0.6	5.8	0.5	5.8	0.5
Consonant Blends	9	8.7	0.8	8.5	1.0	8.4	1.0	8.5	0.9
Blending Total	28	27.4	1.4	26.9	2.0	27.0	1.8	27.0	1.4
Vowel Combinations	9	7.9	1.4	7.6	1.6	7.4	1.6	7.2	1.7
Consonant Digraphs	6	5.7	0.6	5.5	1.0	5.5	1.0	5.3	1.1
Controlled Vowels	4	3.6	0.8	3.4	0.9	3.2	1.0	3.2	0.9
Larger Spelling Patterns	5	4.7	0.5	4.6	0.8	4.6	0.7	4.6	0.7
Sight Words	4	3.9	0.4	3.7	0.7	3.8	0.6	3.7	0.6
Chunking Total	28	25.8	2.9	24.8	4.1	24.4	4.0	24.0	4.1
Final e	6	5.4	0.9	4.9	1.2	4.9	1.3	4.8	1.2
Double Consonants	4	2.6	1.1	2.4	1.1	2.4	1.2	2.3	1.0
Open Syllables	4	3.8	0.5	3.7	0.6	3.6	0.7	3.5	0.7
Scanning Total	14	11.8	2.0	11.0	2.4	10.9	2.5	10.6	2.2
Morphemes	10	8.7	1.1	8.4	1.3	8.3	1.2	8.3	1.3
Linear Blending	6	5.6	0.8	5.5	1.0	5.5	0.9	5.4	0.9
Syntactic Units	7	6.7	0.8	6.6	0.9	6.6	1.1	6.6	0.9
Punctuation	5	4.1	1.1	4.0	1.1	3.6	1.3	3.4	1.3
Context (Total)	9	8.5	0.9	8.4	1.2	8.3	1.2	8.3	1.1
Context (Vocabulary)	4	3.9	0.5	3.8	0.7	3.7	0.6	3.7	0.7
Context (Sentences)	4	3.9	0.3	3.8	0.5	3.8	0.6	3.8	0.5
Sentence Questions	8	7.7	0.7	7.4	1.2	7.2	1.4	7.4	1.4
Reading for Meaning Total	45	41.4	4.0	40.3	5.1	39.4	5.5	39.3	4.8
Grand Total	115	106.4	9.1	103.1	12.4	101.8	12.6	101.0	11.3
Attitude:									
Attitude to School	9	7.4	2.1	7.5	2.0	7.4	1.9	7.3	2.2
Reading Preference	4	1.9	1.2	1.8	1.1	1.7	1.1	2.0	1.0
Math Preference	4	1.8	1.3	1.7	1.2	1.8	1.3	1.5	1.2
Social Studies Preference	4	1.4	1.1	1.4	1.1	1.5	1.2	1.5	1.1
Art Preference	4	3.3	1.1	3.2	1.3	3.3	1.2	3.4	1.1
Spelling Preference	4	1.7	0.9	1.9	1.0	1.6	1.0	1.6	1.0
Left-right Orientation	2	2.0	0.2	2.0	0.0	2.0	0.1	2.0	0.0
Scrambled Sentences	4	3.7	0.6	3.7	0.7	3.7	0.6	3.7	0.6
Individual Test Total	36	31.7	3.6	31.4	4.4	31.2	4.6	29.1	5.4
Metropolitan Achievement (raw scores)	50	31.0	10.7	28.1	10.3	27.1	10.9	26.0	10.8

Table I-47

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=76		EC N=30		CE N=53		CC N=73	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	10.8	1.6	11.0	0.9	10.8	1.7	10.7	1.4
Vowels	6	4.5	1.5	4.2	1.4	4.2	1.7	3.8	1.5
Consonant Blends	9	5.9	1.9	6.4	1.9	6.0	2.2	5.7	1.8
Blending Total	28	21.1	4.1	21.6	3.5	21.0	4.8	20.1	3.8
Vowel Combinations	9	3.9	1.5	3.3	1.2	3.3	1.6	3.7	1.8
Consonant Digraphs	6	2.0	1.3	1.6	1.4	2.0	1.4	1.7	1.3
Controlled Vowels	4	1.2	0.9	1.0	0.9	1.3	1.1	1.1	1.0
Larger Spelling Patterns	5	2.4	1.3	2.2	1.0	2.3	1.3	2.0	1.2
Sight Words	4	1.8	0.9	1.6	1.1	1.[illegible]	1.1	1.5	1.0
Chunking Total	28	11.3	3.4	9.8	3.6	10.6	4.0	10.0	3.9
Final e	6	1.9	1.3	1.7	1.1	1.9	1.3	2.1	1.3
Double Consonants	4	1.0	0.9	1.1	0.8	1.2	0.8	1.0	0.8
Open Syllables	4	2.2	0.9	2.2	1.0	1.8	1.1	1.9	1.1
Scanning Total	14	5.1	2.2	5.1	1.8	4.9	2.2	5.0	2.4
Morphemes	10	4.4	1.6	4.1	1.7	4.6	1.6	4.0	1.9
Linear Blending	6	2.6	1.3	2.5	1.0	2.5	1.4	2.1	1.4
Syntactic Units	7	3.8	1.7	3.6	1.8	2.8	1.8	2.8	1.9
Punctuation	5	1.4	1.1	1.5	1.0	1.5	1.1	1.4	1.0
Context (Total)	9	4.1	2.1	4.0	2.0	3.9	2.3	3.7	2.1
Context (Vocabulary)	4	1.5	1.0	1.7	1.0	1.4	1.2	1.3	0.9
Context (Sentences)	4	1.9	1.2	2.3	1.3	1.9	1.4	1.7	1.2
Sentence Questions	8	2.6	1.8	2.8	1.6	2.4	1.8	2.3	1.8
Reading for Meaning Total	45	18.9	6.4	18.5	6.1	17.7	7.0	16.3	7.0
Grand Total	115	56.5	12.3	55.0	11.9	54.2	14.8	51.4	14.4
Attitude:									
Attitude to School	9	7.1	1.8	6.9	1.8	7.0	2.1	7.4	1.5
Reading Preference	4	2.4	1.1	1.6	1.0	2.0	1.0	1.9	1.0
Math Preference	4	1.6	1.2	1.9	1.1	1.6	1.2	1.8	1.1
Social Studies Preference	4	1.4	1.3	1.8	1.3	1.6	1.3	1.6	1.3
Art Preference	4	2.8	1.3	2.9	1.3	3.1	0.9	2.6	1.3
Spelling Preference	4	1.8	1.0	1.8	1.2	1.8	1.0	2.0	1.1
Left-right Orientation	2	1.7	0.6	2.0	0.0	1.9	0.4	1.5	0.7
Scrambled Sentences	4	1.2	0.8	1.8	1.6	1.6	1.1	1.4	1.4
Individual Test Total	36	14.9	7.0	22.6	5.8	18.3	7.4	13.2	6.1
Metropolitan Achievement (raw scores)	35	20.4	5.5	19.6	5.4	18.5	5.6	17.6	5.5

Table I-48

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=123 M	EE N=123 SD	EC N=120 M	EC N=120 SD	CE N=131 M	CE N=131 SD	CC N=154 M	CC N=154 SD
Consonants	13	11.3	1.6	11.2	1.3	10.8	1.7	10.9	1.5
Vowels	6	4.6	1.5	4.6	1.4	4.1	1.5	4.2	1.4
Consonant Blends	9	6.3	1.9	6.2	1.8	5.9	1.7	6.1	1.8
Blending Total	28	22.2	4.0	22.0	3.5	20.8	4.0	21.2	3.7
Vowel Combinations	9	4.2	1.5	4.1	1.5	3.8	1.4	3.7	1.5
Consonant Digraphs	6	2.7	1.5	2.6	1.3	2.2	1.4	2.3	1.3
Controlled Vowels	4	1.3	0.9	1.2	1.0	1.1	0.8	1.1	0.9
Larger Spelling Patterns	5	3.0	1.3	2.9	1.2	2.5	1.1	2.6	1.2
Sight Words	4	2.3	0.9	2.4	1.0	2.1	1.0	2.3	1.0
Chunking Total	28	13.4	3.7	13.2	3.7	11.6	3.5	12.0	3.4
Final e	6	2.0	1.3	2.1	1.2	1.8	1.2	1.6	1.1
Double Consonants	4	1.1	0.9	1.2	0.8	1.1	0.9	1.1	0.9
Open Syllables	4	2.1	1.1	2.1	1.1	1.8	1.1	2.0	1.1
Scanning Total	14	5.2	2.2	5.4	2.2	4.7	2.1	4.6	1.8
Morphemes	10	5.4	2.1	5.4	1.9	5.0	2.0	4.9	1.7
Linear Blending	6	3.4	1.2	3.3	1.3	3.2	1.3	3.4	1.2
Syntactic Units	7	4.5	1.8	4.1	1.7	3.5	1.8	3.8	1.9
Punctuation	5	1.7	1.0	1.7	1.2	1.6	0.9	1.6	1.1
Context (Total)	9	5.0	2.1	4.8	2.0	3.9	2.0	4.5	2.1
Context (Vocabulary)	4	2.1	1.1	2.0	1.2	1.8	1.2	1.9	1.1
Context (Sentences)	4	2.4	1.1	2.2	1.1	1.8	1.1	2.1	1.2
Sentence Questions	8	3.3	2.0	2.7	1.6	2.6	1.6	2.4	1.5
Reading for Meaning Total	45	23.3	7.3	22.0	6.4	19.9	6.6	20.7	6.2
Grand Total	115	64.0	14.9	62.5	13.2	57.2	13.4	58.6	12.3
Attitude:									
Attitude to School	9	7.9	1.5	8.0	1.3	7.7	1.7	7.5	1.7
Reading Preference	4	2.0	1.0	1.9	1.1	2.0	1.0	2.1	1.0
Math Preference	4	1.6	1.2	1.6	1.1	1.4	1.1	1.4	1.0
Social Studies Preference	4	1.8	1.2	1.5	1.1	1.6	1.1	1.7	1.2
Art Preference	4	3.1	1.2	3.1	1.2	3.2	1.1	3.3	1.0
Spelling Preference	4	1.5	1.1	1.9	1.1	1.7	1.0	1.5	1.1
Left-right Orientation	2	2.0	0.0	1.9	0.4	1.9	0.4	1.9	0.4
Scrambled Sentences	4	2.5	1.3	1.9	1.2	1.4	1.0	1.7	1.1
Individual Test Total	36	22.4	5.4	19.5	7.5	16.8	6.0	15.5	5.3
Metropolitan Achievement (raw scores)	35	21.7	5.3	21.0	5.4	20.4	5.4	20.1	5.0

Table I-49

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=76 M	EE N=76 SD	EC N=30 M	EC N=30 SD	CE N=53 M	CE N=53 SD	CC N=73 M	CC N=73 SD
Consonants	13	12.5	0.8	12.5	0.7	11.9	1.2	12.0	1.0
Vowels	6	5.7	0.7	5.5	0.9	5.2	1.2	5.0	1.2
Consonant Blends	9	8.3	1.3	7.6	1.7	7.8	1.7	7.2	1.7
Blending Total	28	26.5	2.4	25.6	2.6	24.8	3.5	24.2	3.2
Vowel Combinations	9	6.4	1.8	5.6	1.7	5.4	1.8	4.9	1.7
Consonant Digraphs	6	5.0	1.3	4.1	1.5	3.7	1.6	3.2	1.6
Controlled Vowels	4	2.4	1.1	2.2	1.1	2.0	1.1	1.6	1.1
Larger Spelling Patterns	5	4.2	0.9	4.0	1.1	3.4	1.4	3.2	1.4
Sight Words	4	3.1	1.0	3.1	0.9	2.5	1.0	2.7	1.1
Chunking Total	28	21.3	4.7	18.9	4.9	17.0	5.4	15.6	5.0
Final e	6	4.4	1.7	3.8	1.7	3.3	1.7	2.9	1.7
Double Consonants	4	1.6	1.0	1.9	1.0	1.4	1.0	1.3	1.0
Open Syllables	4	3.1	1.0	3.2	1.0	2.9	1.1	2.7	1.0
Scanning Total	14	9.2	2.9	9.0	2.7	7.7	2.5	6.8	2.9
Morphemes	10	7.6	1.8	7.6	2.2	6.8	2.2	6.4	2.2
Linear Blending	6	4.8	1.3	4.3	1.3	4.0	1.6	3.9	1.5
Syntactic Units	7	5.8	1.4	5.6	1.7	5.1	1.7	4.9	1.7
Punctuation	5	2.6	1.4	2.6	1.3	2.0	1.0	1.9	1.2
Context (Total)	9	7.1	1.8	6.6	1.8	6.2	2.1	6.2	2.4
Context (Vocabulary)	4	3.1	1.0	3.0	1.1	2.7	1.3	2.6	1.2
Context (Sentences)	4	3.4	0.9	3.4	0.9	3.1	1.2	2.9	1.3
Sentence Questions	8	6.0	2.0	5.5	2.2	4.8	2.5	4.4	2.4
Reading for Meaning Total	45	33.9	7.3	32.2	8.3	28.8	8.8	27.7	8.7
Grand Total	115	90.8	15.9	85.6	16.7	78.3	18.4	74.4	18.0
Attitude:									
Attitude to School	9	7.6	1.6	7.3	1.8	7.5	2.0	7.8	1.5
Reading Preference	4	1.8	1.0	1.8	0.9	2.0	1.2	2.1	1.1
Math Preference	4	1.7	1.2	1.8	1.4	1.7	1.1	1.9	1.3
Social Studies Preference	4	1.7	1.3	1.3	1.1	1.2	1.2	1.7	1.2
Art Preference	4	3.4	1.0	3.5	0.9	3.5	1.0	2.7	1.3
Spelling Preference	4	1.4	1.0	1.6	1.0	1.7	1.1	1.7	1.1
Left-right Orientation	2	1.6	0.9	2.0	0.0	1.6	0.8	2.0	0.0
Scrambled Sentences	4	3.1	1.0	3.4	0.9	2.4	1.5	1.8	1.1
Individual Test Total	36	30.1	4.1	28.6	4.5	27.4	6.0	21.1	5.8
Metropolitan Achievement (raw scores)	40	22.3	8.9	19.5	8.0	16.8	6.8	16.8	7.0

Table I-50

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=123		EC N=120		CE N=131		CC N=154	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.5	0.8	12.3	1.0	12.1	1.1	12.1	1.0
Vowels	6	5.7	0.6	5.6	0.7	5.5	0.8	5.5	0.8
Consonant Blends	9	7.8	1.3	7.9	1.3	7.5	1.7	7.7	1.4
Blending Total	28	26.0	2.1	25.8	2.4	25.1	3.0	25.3	2.6
Vowel Combinations	9	6.2	1.9	6.1	1.8	5.5	1.8	5.3	1.6
Consonant Digraphs	6	5.0	1.2	4.9	1.4	4.1	1.5	4.0	1.5
Controlled Vowels	4	2.4	1.1	2.4	1.2	2.1	1.1	1.9	1.1
Larger Spelling Patterns	5	4.2	1.0	4.3	1.0	3.8	1.1	3.8	1.1
Sight Words	4	3.2	0.9	3.2	1.0	3.0	1.0	3.0	0.9
Chunking Total	28	21.1	4.4	20.8	5.0	18.5	4.8	18.1	4.4
Final e	6	4.1	1.5	4.3	1.4	3.5	1.5	3.6	1.5
Double Consonants	4	1.7	1.0	1.8	1.1	1.6	1.0	1.5	1.0
Open Syllables	4	3.3	0.9	3.3	1.0	3.1	0.9	3.1	1.0
Scanning Total	14	9.0	2.5	9.3	2.7	8.2	2.6	8.1	2.5
Morphemes	10	7.8	1.5	7.6	1.6	7.1	1.7	7.2	1.4
Linear Blending	6	4.9	1.1	4.8	1.3	4.3	1.3	4.4	1.3
Syntactic Units	7	6.1	1.1	6.0	1.5	5.4	1.6	5.5	1.7
Punctuation	5	3.0	1.3	2.9	1.3	2.0	1.3	2.2	1.3
Context (Total)	9	7.3	1.9	7.3	1.7	6.8	2.0	6.8	1.9
Context (Vocabulary)	4	3.2	0.9	3.3	1.0	2.8	1.2	2.8	1.1
Context (Sentences)	4	3.4	0.9	3.6	0.8	3.2	1.1	3.2	1.0
Sentence Questions	8	6.4	2.0	6.2	2.0	5.5	2.1	5.3	2.3
Reading for Meaning Total	45	35.5	6.9	34.8	7.3	31.2	7.5	31.5	7.2
Grand Total	115	91.6	14.1	90.7	15.9	83.0	15.8	83.0	14.8
Attitude:									
Attitude to School	9	7.8	1.7	8.0	1.7	7.8	1.9	7.8	1.6
Reading Preference	4	1.9	1.1	1.8	1.0	2.1	0.9	2.0	0.9
Math Preference	4	1.7	1.2	1.8	1.1	1.4	1.1	1.4	1.1
Social Studies Preference	4	1.7	1.1	1.5	1.2	1.6	1.1	1.7	1.2
Art Preference	4	3.2	1.2	3.2	1.4	3.4	1.0	3.4	1.0
Spelling Preference	4	1.5	1.1	1.8	1.1	1.5	1.1	1.4	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	1.9	0.3	2.0	0.0
Scrambled Sentences	4	3.4	0.7	3.4	1.0	2.9	1.1	2.6	1.1
Individual Test Total	36	28.1	4.8	28.4	5.7	24.3	6.1	23.6	5.3
Metropolitan Achievement (raw scores)	40	23.3	7.5	22.0	7.9	20.3	7.6	20.7	6.2

Table I-51

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=76 M	SD	EC N=30 M	SD	CE N=53 M	SD	CC N=73 M	SD
Consonants	13	12.5	0.9	12.3	0.8	12.1	0.9	12.0	1.1
Vowels	6	5.5	0.9	5.6	0.7	5.3	1.1	5.3	1.0
Consonant Blends	9	8.3	1.3	7.9	1.4	7.6	1.7	7.8	1.5
Blending Total	28	26.3	2.6	25.8	2.2	25.0	3.2	25.1	3.1
Vowel Combinations	9	6.6	1.7	6.2	1.7	5.5	2.2	5.2	1.9
Consonant Digraphs	6	4.9	1.5	4.5	1.2	3.7	1.8	3.4	1.6
Controlled Vowels	4	2.5	1.1	2.4	1.1	2.4	1.1	2.0	1.1
Larger Spelling Patterns	5	4.1	1.1	3.9	1.3	3.5	1.5	3.3	1.5
Sight Words	4	3.4	0.8	3.3	0.9	2.8	1.1	2.8	1.0
Chunking Total	28	21.5	5.1	20.2	4.6	17.9	6.1	16.6	5.5
Final e	6	4.5	1.6	4.1	1.5	3.4	1.6	3.1	1.8
Double Consonants	4	1.8	1.0	1.4	1.3	1.3	1.0	1.4	0.9
Open Syllables	4	3.4	0.7	3.5	0.8	2.9	1.1	2.7	1.0
Scanning Total	14	9.7	2.5	8.9	2.8	7.6	2.8	7.2	2.8
Morphemes	10	7.7	1.8	7.7	1.5	6.9	1.8	6.7	2.1
Linear Blending	6	4.9	1.3	4.8	1.3	4.4	1.3	4.2	1.4
Syntactic Units	7	6.1	1.5	6.2	1.0	5.3	2.0	5.3	1.6
Punctuation	5	2.7	1.1	2.4	1.6	2.3	1.4	2.1	1.2
Context (Total)	9	7.5	1.7	7.4	2.0	6.7	2.2	6.4	2.2
Context (Vocabulary)	4	3.2	1.1	3.2	1.1	3.0	1.2	2.7	1.3
Context (Sentences)	4	3.6	0.8	3.6	0.9	3.2	1.1	3.1	1.1
Sentence Questions	8	6.3	2.2	6.1	2.1	5.2	2.7	5.0	2.5
Reading for Meaning Total	45	35.2	7.1	34.6	6.9	30.8	9.5	29.7	8.8
Grand Total	115	92.7	15.3	89.5	14.6	81.3	20.4	78.6	18.7
Attitude:									
Attitude to School	9	7.8	1.4	8.1	1.6	7.5	1.7	8.1	1.4
Reading Preference	4	1.8	1.0	2.0	1.0	1.8	1.0	2.0	0.9
Math Preference	4	1.4	1.2	1.5	1.2	1.5	1.1	1.6	1.2
Social Studies Preference	4	1.6	1.4	1.7	1.3	1.7	1.3	1.8	1.3
Art Preference	4	3.4	1.2	3.3	1.1	3.2	1.3	3.0	1.4
Spelling Preference	4	1.9	1.0	1.5	1.0	1.6	1.2	1.6	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	1.8	0.4
Scrambled Sentences	4	3.7	0.8	3.7	0.5	3.6	0.7	2.6	1.5
Individual Test Total	36	29.9	3.7	28.5	3.0	29.9	5.4	21.9	8.4
Metropolitan Achievement (raw scores)	40	25.1	9.3	22.7	7.6	20.7	8.3	19.2	8.1

Table I-52

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=123		EC N=120		CE N=131		CC N=154	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.3	0.8	12.2	1.0	12.1	1.1	12.1	1.2
Vowels	6	5.7	0.6	5.6	0.8	5.4	0.9	5.5	0.8
Consonant Blends	9	7.7	1.5	7.7	1.5	7.6	1.6	7.6	1.6
Blending Total	28	25.7	2.4	25.5	2.6	25.0	3.1	25.1	3.0
Vowel Combinations	9	6.5	1.5	6.5	1.7	5.7	1.7	5.9	1.6
Consonant Digraphs	6	5.0	1.2	5.0	1.2	4.3	1.6	4.3	1.4
Controlled Vowels	4	2.7	1.0	2.6	1.1	2.1	1.2	2.1	1.1
Larger Spelling Patterns	5	4.3	0.9	4.1	1.1	3.8	1.2	4.0	1.1
Sight Words	4	3.3	0.9	3.2	0.9	3.0	1.0	3.0	1.0
Chunking Total	28	21.8	4.3	21.4	4.7	18.9	5.0	19.2	4.5
Final e	6	4.4	1.3	4.2	1.4	3.6	1.5	3.7	1.4
Double Consonants	4	1.8	1.1	1.7	1.0	1.4	1.0	1.7	0.9
Open Syllables	4	3.4	0.9	3.3	0.9	3.1	0.9	3.2	1.0
Scanning Total	14	9.6	2.4	9.2	2.4	8.1	2.6	8.6	2.4
Morphemes	10	7.9	1.3	7.6	1.6	7.2	1.8	7.4	1.6
Linear Blending	6	5.1	1.1	4.8	1.3	4.5	1.4	4.6	1.3
Syntactic Units	7	6.2	1.3	6.0	1.4	5.7	1.6	5.9	1.5
Punctuation	5	3.0	1.4	2.9	1.3	2.2	1.3	2.3	1.3
Context (Total)	9	7.6	1.4	7.4	1.9	7.1	2.0	6.9	2.0
Context (Vocabulary)	4	3.4	0.9	3.4	1.0	3.0	1.1	3.1	1.1
Context (Sentences)	4	3.7	0.6	3.6	0.8	3.3	1.1	3.3	1.0
Sentence Questions	8	6.7	1.8	6.0	2.2	5.8	2.4	5.8	2.3
Reading for Meaning Total	45	36.5	6.2	34.7	7.7	32.4	8.1	32.9	7.7
Grand Total	115	93.6	13.6	90.8	15.7	84.5	16.9	85.9	15.7
Attitude:									
Attitude to School	9	7.6	2.1	7.5	2.0	7.7	1.8	7.6	2.0
Reading Preference	4	1.8	1.1	1.8	0.9	1.8	0.9	2.0	1.0
Math Preference	4	1.7	1.3	1.6	1.2	1.7	1.2	1.4	1.2
Social Studies Preference	4	1.8	1.1	1.5	1.1	1.6	1.1	1.7	1.1
Art Preference	4	3.2	1.3	3.3	1.2	3.5	0.9	3.6	1.0
Spelling Preference	4	1.5	1.0	1.8	1.0	1.4	1.0	1.3	1.0
Left-right Orientation	2	2.0	0.1	2.0	0.0	2.0	0.1	2.0	0.1
Scrambled Sentences	4	3.1	0.9	3.2	1.0	2.8	1.0	2.8	1.0
Individual Test Total	36	26.9	4.9	27.6	5.7	24.4	6.5	23.6	5.7
Metropolitan Achievement (raw scores)	40	25.0	7.8	23.6	7.9	21.9	8.6	21.9	7.0

Table I-53

Mean and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=76 M	EE N=76 SD	EC N=30 M	EC N=30 SD	CE N=53 M	CE N=53 SD	CC N=73 M	CC N=73 SD
Consonants	13	12.7	0.6	12.7	0.6	12.6	0.8	12.3	1.4
Vowels	6	5.8	0.4	5.8	0.7	5.7	0.7	5.5	0.9
Consonant Blends	9	8.6	0.8	8.4	1.1	8.2	1.3	8.0	1.4
Blending Total	28	27.2	1.2	26.8	2.2	26.4	2.3	25.8	3.0
Vowel Combinations	9	7.4	1.6	7.0	1.7	6.6	2.0	6.3	1.8
Consonant Digraphs	6	5.3	1.1	5.3	1.0	4.7	1.3	4.6	1.5
Controlled Vowels	4	3.1	1.1	3.0	1.0	2.6	1.3	2.5	1.1
Larger Spelling Patterns	5	4.6	0.7	4.5	0.9	4.2	1.2	4.1	1.1
Sight Words	4	3.8	0.6	3.6	0.7	3.5	0.8	3.3	0.9
Chunking Total	28	24.1	4.1	23.3	4.5	21.6	5.7	20.8	5.1
Final e	6	4.9	1.2	4.9	1.4	4.3	1.6	4.1	1.7
Double Consonants	4	1.9	1.0	1.6	1.0	1.7	1.1	1.6	1.0
Open Syllables	4	3.5	0.7	3.6	0.9	3.4	0.9	3.2	1.0
Scanning Total	14	10.4	2.3	10.2	2.1	9.4	2.7	8.9	2.8
Morphemes	10	8.4	1.2	8.5	1.4	7.6	1.8	7.8	1.7
Linear Blending	6	5.4	1.0	5.2	1.2	5.0	1.2	5.0	1.3
Syntactic Units	7	6.5	0.9	6.4	1.2	5.9	1.6	6.2	1.3
Punctuation	5	3.5	1.1	3.4	1.3	3.2	1.3	3.0	1.1
Context (Total)	9	8.3	1.1	8.1	1.4	7.5	2.0	7.6	1.8
Context (Vocabulary)	4	3.8	0.7	3.6	1.1	3.4	1.1	3.3	1.0
Context (Sentences)	4	3.8	0.5	3.9	0.4	3.5	1.1	3.5	1.0
Sentence Questions	8	6.9	1.8	7.2	1.7	6.4	2.2	6.5	2.2
Reading for Meaning Total	45	38.9	5.3	38.8	6.6	35.6	8.2	36.0	7.5
Grand Total	115	100.5	11.7	99.1	14.3	93.0	17.7	91.6	16.2
Attitude:									
Attitude to School	9	7.7	2.0	7.5	1.5	7.4	1.9	8.1	1.6
Reading Preference	4	1.8	0.9	1.9	1.2	1.7	1.1	2.0	1.0
Math Preference	4	1.5	1.4	1.8	1.3	1.9	1.1	1.7	1.1
Social Studies Preference	4	1.6	1.3	1.6	1.1	1.4	1.3	1.5	1.3
Art Preference	4	3.3	1.2	3.1	1.3	3.3	1.2	3.1	1.2
Spelling Preference	4	1.8	1.1	1.6	1.0	1.8	1.1	1.7	1.1
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.8	0.6	3.8	0.4	3.3	0.7	3.1	1.0
Individual Test Total	36	31.1	2.5	28.7	3.1	29.8	5.1	27.3	3.5
Metropolitan Achievement (raw scores)	50	22.1	8.6	20.7	9.1	20.4	7.8	19.1	8.3

Table I-54

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=123 M	EE N=123 SD	EC N=120 M	EC N=120 SD	CE N=131 M	CE N=131 SD	CC N=154 M	CC N=154 SD
Consonants	13	12.7	0.7	12.5	0.9	12.6	0.8	12.6	0.6
Vowels	6	5.8	0.6	5.7	0.7	5.8	0.6	5.8	0.5
Consonant Blends	9	8.6	1.0	8.4	1.1	8.2	1.2	8.4	1.0
Blending Total	28	27.1	1.7	26.6	2.3	26.6	2.0	26.7	1.5
Vowel Combinations	9	7.3	1.5	7.1	1.7	6.9	1.7	6.7	1.6
Consonant Digraphs	6	5.6	0.8	5.3	1.1	5.3	1.1	5.1	1.2
Controlled Vowels	4	3.3	0.9	3.2	0.9	2.9	1.1	2.9	1.0
Larger Spelling Patterns	5	4.6	0.7	4.4	0.9	4.4	0.8	4.6	0.8
Sight Words	4	3.8	0.5	3.6	0.8	3.6	0.6	3.6	0.7
Chunking Total	28	24.6	3.3	23.7	4.5	23.0	4.2	22.9	4.1
Final e	6	5.0	1.0	4.6	1.2	4.5	1.4	4.5	1.2
Double Consonants	4	2.1	1.1	2.1	1.0	2.0	1.1	2.0	0.8
Open Syllables	4	3.7	0.7	3.7	0.6	3.5	0.8	3.4	0.7
Scanning Total	14	10.8	2.0	10.3	2.3	10.0	2.5	9.9	2.0
Morphemes	10	8.4	1.2	8.2	1.4	8.0	1.2	8.0	1.3
Linear Blending	6	5.4	1.0	5.3	1.1	5.2	1.1	5.2	1.0
Syntactic Units	7	6.6	1.0	6.4	1.1	6.3	1.3	6.4	1.0
Punctuation	5	3.8	1.2	3.7	1.2	3.3	1.3	3.1	1.2
Context (Total)	9	8.3	1.0	8.1	1.4	7.9	1.4	8.1	1.2
Context (Vocabulary)	4	3.8	0.6	3.7	0.8	3.6	0.7	3.5	0.8
Context (Sentences)	4	3.9	0.4	3.8	0.6	3.7	0.7	3.8	0.5
Sentence Questions	8	7.6	0.9	7.2	1.4	6.9	1.6	7.2	1.6
Reading for Meaning Total	45	40.0	4.8	39.0	5.6	37.7	5.9	38.0	4.9
Grand Total	115	102.7	10.3	99.6	13.2	97.2	13.1	97.4	11.2
Attitude:									
Attitude to School	9	7.2	2.2	7.5	2.1	7.3	1.8	7.2	2.3
Reading Preference	4	1.7	1.1	1.8	1.0	1.7	1.1	1.9	1.0
Math Preference	4	2.0	1.3	1.7	1.2	1.7	1.2	1.5	1.2
Social Studies Preference	4	1.3	1.2	1.4	1.1	1.5	1.1	1.4	1.1
Art Preference	4	3.3	1.1	3.2	1.4	3.5	1.0	3.4	1.0
Spelling Preference	4	1.7	0.9	1.9	1.0	1.6	1.1	1.7	1.0
Left-right Orientation	2	2.0	0.2	2.0	0.0	2.0	0.1	2.0	0.0
Scrambled Sentences	4	3.6	0.6	3.6	0.8	3.6	0.7	3.7	0.6
Individual Test Total	36	30.1	3.5	30.2	4.9	29.1	4.6	27.1	5.1
Metropolitan Achievement (raw scores)	50	25.2	9.3	23.9	8.8	21.6	8.5	21.3	8.1

Table I-55

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=26		EC N=26		CE N=21		CC N=25	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.0	0.9	12.7	0.5	12.4	0.7	12.6	0.6
Vowels	6	5.6	0.6	5.5	0.8	5.7	0.8	5.8	0.5
Consonant Blends	9	8.2	0.9	8.1	1.1	8.2	0.8	8.4	0.8
Blending Total	28	25.8	1.8	26.3	1.6	26.3	1.8	26.9	1.0
Vowel Combinations	9	5.8	1.9	5.8	1.5	6.6	1.7	6.8	1.8
Consonant Digraphs	6	3.8	1.4	4.1	1.4	5.0	1.4	4.6	1.1
Controlled Vowels	4	2.1	1.2	2.3	1.0	2.8	1.3	2.7	1.1
Larger Spelling Patterns	5	4.0	1.2	4.0	0.9	4.0	1.2	4.0	0.9
Sight Words	4	2.7	0.9	2.9	0.9	3.1	0.9	2.8	1.0
Chunking Total	28	18.4	5.0	19.0	4.0	21.5	5.4	21.0	4.6
Final e	6	3.5	1.7	3.5	1.4	3.9	1.4	4.2	1.3
Double Consonants	4	1.7	1.1	1.5	0.9	1.8	1.1	2.0	0.9
Open Syllables	4	3.4	0.8	3.3	0.9	3.6	0.9	3.4	0.6
Scanning Total	14	8.5	3.0	8.3	2.4	9.2	2.7	9.6	1.9
Morphemes	10	7.0	1.4	7.2	1.5	8.0	1.3	8.2	1.0
Linear Blending	6	4.2	1.4	4.7	1.1	5.0	1.2	4.8	1.2
Syntactic Units	7	5.8	1.1	6.1	1.1	6.1	1.4	6.0	0.9
Punctuation	4	1.6	1.2	2.1	0.8	1.9	0.8	1.8	1.0
Context (Total)	9	7.4	1.2	7.2	1.3	7.3	1.1	7.9	1.0
Context (Vocabulary)	4	3.2	0.9	3.3	0.9	3.5	0.8	3.3	1.0
Context (Sentences)	4	3.7	0.5	3.5	0.8	3.7	0.5	3.9	0.3
Sentence Questions	8	5.0	2.1	5.5	2.2	5.8	2.2	6.2	2.0
Reading for Meaning Total	45	31.1	5.9	32.7	5.0	34.1	5.7	34.8	5.1
Grand Total	115	83.8	13.4	86.3	10.7	91.1	13.9	92.4	10.8
Attitude:									
Attitude to School	9	8.2	1.0	8.3	1.1	7.4	2.0	7.8	1.5
Reading Preference	4	2.2	1.0	1.9	1.2	1.7	1.1	2.6	1.3
Math Preference	4	1.5	1.2	1.4	1.1	1.6	1.1	1.3	1.0
Social Studies Preference	4	1.2	1.2	1.3	1.2	1.4	1.3	1.5	1.1
Art Preference	4	3.0	1.2	3.7	0.8	3.3	1.1	3.2	1.3
Spelling Preference	4	2.0	1.2	1.5	0.8	2.0	1.1	1.5	0.9
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.2	1.0	2.4	1.1	2.8	1.3	2.8	1.1
Individual Test Total	36	28.5	8.1	27.5	5.6	31.0	6.4	29.7	4.3
Metropolitan Achievement (raw scores)	35	31.9	1.8	31.8	1.8	33.4	1.7	32.8	2.0

Table I-56

Means and Standard Deviations on Tests and Subtests at Pretest, Year 1 for Second-Third Grade Non-target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=96		EC N=62		CE N=67		CC N=60	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.5	0.6	12.2	1.0	12.5	0.7	12.5	0.7
Vowels	6	5.9	0.4	5.5	1.0	5.8	0.5	5.9	0.3
Consonant Blends	9	8.2	1.1	8.0	1.4	8.4	1.0	8.3	1.1
Blending Total	28	26.6	1.5	25.7	2.9	26.7	1.4	26.6	1.5
Vowel Combinations	9	6.0	1.6	6.0	1.7	6.4	1.5	6.2	1.4
Consonant Digraphs	6	4.8	1.2	4.6	1.4	4.7	1.3	4.5	1.3
Controlled Vowels	4	2.3	1.1	2.3	1.2	2.4	1.1	2.2	1.0
Larger Spelling Patterns	5	4.3	1.0	4.1	1.1	4.4	0.9	4.4	0.9
Sight Words	4	3.3	0.8	3.2	0.9	3.4	0.7	3.3	0.8
Chunking Total	28	20.7	4.2	20.3	5.0	21.3	4.0	20.5	3.9
Final e	6	4.1	1.4	3.9	1.6	4.4	1.4	4.2	1.4
Double Consonants	4	1.5	0.8	1.6	1.1	1.6	1.1	1.6	1.1
Open Syllables	4	3.3	0.8	3.2	0.8	3.2	0.9	3.3	0.8
Scanning Total	14	8.8	2.1	8.6	2.6	9.2	2.5	9.1	2.4
Morphemes	10	8.1	1.1	8.1	1.3	8.1	1.2	8.2	1.2
Linear Blending	6	5.2	0.9	5.0	1.1	5.2	0.9	5.1	1.0
Syntactic Units	7	6.3	0.9	6.0	1.3	6.4	0.9	6.3	1.0
Punctuation	4	2.5	1.3	2.2	1.4	2.4	1.3	2.2	1.3
Context (Total)	9	7.8	1.3	7.7	1.1	7.6	1.1	7.4	1.4
Context (Vocabulary)	4	3.4	1.0	3.3	0.9	3.4	0.8	3.4	0.8
Context (Sentences)	4	3.7	0.5	3.7	0.7	3.7	0.6	3.6	0.8
Sentence Questions	8	6.5	1.8	6.1	2.0	6.3	1.9	6.3	1.9
Reading for Meaning Total	45	36.4	4.9	35.2	5.6	35.9	4.7	35.5	5.2
Grand Total	115	92.5	10.8	89.8	14.1	93.2	10.7	91.7	10.9
Attitude:									
Attitude to School	9	8.1	1.4	8.5	1.0	8.1	1.3	8.0	1.5
Reading Preference	4	2.3	1.0	1.9	1.1	1.9	1.0	2.0	1.0
Math Preference	4	1.4	1.2	1.6	1.3	1.7	1.1	1.7	1.2
Social Studies Preference	4	1.6	1.1	1.5	1.2	1.7	1.2	1.8	1.2
Art Preference	4	3.1	1.2	3.1	1.2	3.2	1.2	3.0	1.4
Spelling Preferences	4	1.6	1.2	1.9	1.0	1.6	1.2	1.6	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.1	1.1	2.9	1.1	3.7	0.9	3.4	0.7
Individual Test Total	45	30.4	4.7	29.1	5.4	34.3	3.1	30.3	4.8
Metropolitan Achievement (raw scores)	35	32.6	2.0	32.5	2.1	32.8	2.0	32.6	1.8

Table I-57

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Non-target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=26 M	EE N=26 SD	EC N=26 M	EC N=26 SD	CE N=21 M	CE N=21 SD	CC N=25 M	CC N=25 SD
Consonants	13	12.8	0.4	13.0	0.0	12.9	0.4	12.9	0.3
Vowels	6	5.9	0.3	6.0	0.0	6.0	0.0	6.0	0.0
Consonant Blends	9	8.9	0.3	8.8	0.4	8.9	0.4	9.0	0.2
Blending Total	28	27.7	0.6	27.8	0.4	27.7	0.6	27.9	0.3
Vowel Combinations	9	8.3	1.0	7.8	1.2	7.9	1.3	7.9	1.2
Consonant Digraphs	6	5.8	0.5	5.9	0.4	5.7	0.6	5.8	0.4
Controlled Vowels	4	3.7	0.6	3.2	0.7	3.7	0.5	3.4	0.6
Larger Spelling Patterns	5	5.0	0.2	4.8	0.5	4.8	0.4	4.8	0.4
Sight Words	4	3.8	0.5	3.8	0.5	4.0	0.2	3.9	0.4
Chunking Total	28	26.7	1.9	25.4	2.0	26.0	2.2	25.9	2.2
Final e	6	5.7	0.6	5.7	0.6	5.5	0.8	5.3	0.8
Double Consonants	4	2.5	0.9	2.5	1.2	2.5	1.1	2.0	1.3
Open Syllables	4	3.7	0.5	3.7	0.6	3.9	0.4	3.7	0.5
Scanning Total	14	11.9	1.4	11.8	1.7	11.9	1.5	11.0	2.0
Morphemes	10	9.0	0.8	8.9	0.9	9.0	0.7	8.7	1.0
Linear Blending	6	5.7	0.5	5.5	0.8	5.8	0.4	5.6	0.6
Syntactic Units	7	6.7	0.5	6.8	0.4	6.9	0.3	6.7	0.7
Punctuation	4	3.8	1.1	3.4	1.2	3.0	1.2	3.5	1.3
Context (Total)	9	8.5	0.6	8.4	0.8	8.4	0.9	8.4	0.9
Context (Vocabulary)	4	3.9	0.3	3.8	0.4	3.9	0.5	3.9	0.3
Context (Sentences)	4	4.0	0.2	4.0	0.2	4.0	0.0	4.0	0.2
Sentence Questions	8	7.8	0.4	7.5	0.9	7.9	0.4	7.7	0.7
Reading for Meaning Total	45	41.5	2.0	40.3	2.9	41.0	2.2	40.6	3.6
Grand Total	115	107.7	4.7	105.3	5.5	106.6	4.9	105.4	6.2
Attitude:									
Attitude to School	9	7.2	2.4	8.3	0.9	7.1	2.0	8.0	1.4
Reading Preference	4	2.0	1.2	1.8	1.2	2.1	1.1	2.2	1.0
Math Preference	4	1.5	0.9	2.0	1.0	1.6	1.5	1.6	1.4
Social Studies Preference	4	1.7	1.3	1.4	1.1	1.3	1.5	1.2	1.1
Art Preference	4	3.4	0.9	3.3	1.0	3.0	1.1	3.3	1.3
Spelling Preference	4	1.4	1.0	1.4	1.2	1.9	1.1	1.7	0.9
Left-right Orientation	2	1.7	0.8	1.6	0.7	2.0	0.0	1.8	0.7
Scrambled Sentences	4	3.3	1.6	3.9	0.4	4.0	0.0	3.2	1.6
Individual Test Total	36	32.5	4.5	32.0	2.3	33.8	3.3	30.6	5.7
Metropolitan Achievement (raw scores)	40	33.7	4.0	31.9	5.6	32.3	4.6	31.2	7.1

Table I-58

Means and Standard Deviations on Tests and Subtests at Posttest, Year 1 for Second-Third Grade Non-target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=96 M	EE N=96 SD	EC N=62 M	EC N=62 SD	CE N=67 M	CE N=67 SD	CC N=60 M	CC N=60 SD
Consonants	13	12.8	0.4	12.8	0.8	12.9	0.4	12.8	0.4
Vowels	6	6.0	0.1	6.0	0.2	6.0	0.1	6.0	0.3
Consonant Blends	9	8.8	0.4	8.7	1.0	8.8	0.5	8.7	0.5
Blending Total	28	27.6	0.7	27.4	1.9	27.6	0.6	27.5	0.8
Vowel Combinations	9	7.9	1.3	8.0	1.2	8.0	1.1	7.7	1.3
Consonant Digraphs	6	5.8	0.6	5.8	0.5	5.8	0.5	5.8	0.5
Controlled Vowels	4	3.5	0.7	3.5	0.8	3.6	0.7	3.5	0.7
Larger Spelling Patterns	5	4.8	0.6	4.8	0.5	4.9	0.6	4.8	0.5
Sight Words	4	3.8	0.5	3.8	0.5	3.9	0.3	3.9	0.3
Chunking Total	28	25.9	2.5	25.9	2.8	26.2	2.2	25.5	2.4
Final e	6	5.5	0.8	5.5	0.8	5.5	0.6	5.4	0.8
Double Consonants	4	2.6	1.2	2.9	1.2	2.7	1.1	2.7	1.0
Open Syllables	4	3.8	0.4	3.9	0.4	3.8	0.4	3.8	0.4
Scanning Total	14	12.0	1.8	12.2	1.9	12.0	1.6	11.9	1.6
Morphemes	10	8.9	0.9	8.6	1.3	8.7	1.0	8.9	0.9
Linear Blending	6	5.8	0.5	5.7	0.7	5.8	0.5	5.8	0.5
Syntactic Units	7	6.8	0.5	6.8	0.5	6.8	0.4	6.8	0.5
Punctuation	4	4.0	1.0	3.9	1.1	3.5	1.2	3.5	1.3
Context (Total)	9	8.6	0.7	8.5	0.6	8.7	0.5	8.5	0.7
Context (Vocabulary)	4	3.9	0.3	3.9	0.3	4.0	0.1	3.9	0.4
Context (Sentences)	4	4.0	0.2	3.9	0.3	4.0	0.0	4.0	0.2
Sentence Questions	8	7.7	0.8	7.6	0.9	7.7	0.6	7.8	0.6
Reading for Meaning Total	45	41.8	2.6	41.2	3.8	41.3	2.3	41.1	2.7
Grand Total	115	107.3	6.2	106.8	9.3	107.2	4.9	105.9	5.9
Attitude:									
Attitude to School	9	8.2	1.5	8.2	1.4	8.4	1.3	7.8	1.9
Reading Preference	4	2.1	1.0	1.8	1.0	1.9	1.1	2.1	0.9
Math Preference	4	1.4	1.2	1.9	1.3	1.9	1.1	1.5	1.3
Social Studies Preference	4	1.8	1.2	1.6	1.2	1.7	1.3	1.7	1.1
Art Preference	4	3.2	1.2	2.9	1.3	3.1	1.4	3.4	1.1
Spelling Preference	4	1.5	1.1	1.8	1.1	1.5	1.0	1.4	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.8	0.4	3.7	0.6	3.9	0.3	3.8	0.6
Individual Test Total	45	33.1	3.6	31.5	4.7	33.8	1.7	31.7	3.6
Metropolitan Achievement (raw scores)	40	33.7	4.4	33.1	6.0	34.0	4.2	32.9	5.4

Table I-59

Means and Standard Deviations on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=26 M	EE N=26 SD	EC N=26 M	EC N=26 SD	CE N=21 M	CE N=21 SD	CC N=25 M	CC N=25 SD
Consonants	13	12.9	0.3	13.0	0.2	12.9	0.3	12.8	0.4
Vowels	6	5.9	0.3	5.9	0.3	6.0	0.0	6.0	0.0
Consonant Blends	9	8.8	0.4	8.9	0.3	8.8	0.4	9.0	0.2
Blending Total	28	27.7	0.6	27.8	0.4	27.7	0.6	27.8	0.5
Vowel Combinations	9	8.1	1.3	8.1	1.0	8.4	0.7	8.3	0.9
Consonant Digraphs	6	5.8	0.5	5.8	0.4	5.8	0.4	5.8	0.5
Controlled Vowels	4	3.5	0.9	3.2	0.7	3.5	0.7	3.2	0.9
Larger Spelling Patterns	5	4.8	0.4	5.0	0.2	4.9	0.4	4.8	0.4
Sight Words	4	4.0	0.2	4.0	0.2	4.0	0.2	4.0	0.2
Chunking Total	28	26.2	2.6	26.1	1.5	26.5	1.5	26.2	1.9
Final e	6	5.5	0.8	5.6	0.5	5.5	0.7	5.6	0.6
Double Consonants	4	2.3	1.1	2.3	0.9	2.4	1.2	2.3	1.1
Open Syllables	4	3.9	0.3	3.9	0.3	4.0	0.2	3.8	0.4
Scanning Total	14	11.7	1.6	11.8	1.4	11.9	1.6	11.7	1.5
Morphemes	10	9.2	0.8	9.1	0.8	9.0	0.8	8.9	0.8
Linear Blending	6	5.8	0.5	5.6	0.6	5.8	0.5	5.7	0.6
Syntactic Units	7	6.9	0.3	6.8	0.4	6.9	0.3	6.9	0.4
Punctuation	4	3.9	1.2	3.7	1.4	3.5	1.1	3.6	1.3
Context (Total)	9	8.7	0.5	8.7	0.7	8.8	0.4	8.7	0.6
Context (Vocabulary)	4	3.9	0.3	4.0	0.2	4.0	0.2	4.0	0.2
Context (Sentences)	4	4.0	0.2	4.0	0.2	4.0	0.0	4.0	0.0
Sentence Questions	8	7.8	0.4	7.8	0.5	8.0	0.0	7.8	0.5
Reading for Meaning Total	45	42.4	2.2	41.6	2.0	42.0	1.7	41.7	2.1
Grand Total	115	107.9	5.5	107.3	3.7	108.0	4.3	107.3	4.6
Attitude:									
Attitude to School	9	7.5	2.0	8.3	1.3	7.4	2.0	7.7	1.7
Reading Preference	4	1.3	1.1	1.5	0.9	2.2	1.2	1.9	1.2
Math Preference	4	2.0	1.2	2.0	1.2	1.3	1.4	1.7	1.4
Social Studies Preference	4	1.5	1.1	1.6	1.5	1.6	1.4	1.8	1.2
Art Preference	4	3.4	1.2	3.3	1.3	3.3	1.2	3.0	1.4
Spelling Preference	4	1.8	1.1	1.6	1.0	1.6	0.7	1.5	1.0
Left-right Orientation	2	2.0	0.0	1.8	0.7	2.0	0.0	1.6	0.7
Scrambled Sentences	4	4.0	0.0	3.5	1.1	3.9	0.4	3.9	0.4
Individual Test Total	36	33.8	3.4	30.6	7.0	35.0	0.8	31.8	3.5
Metropolitan Achievement (raw scores)	40	34.8	4.5	34.2	4.7	35.3	4.1	35.8	2.7

Table I-60

Means and Standard Deviatons on Tests and Subtests at Pretest, Year 2 for Second-Third Grade Non-target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=96 M	EE N=96 SD	EC N=62 M	EC N=62 SD	CE N=67 M	CE N=67 SD	CC N=60 M	CC N=60 SD
Consonants	13	12.8	0.5	12.7	0.7	12.9	0.4	12.3	0.5
Vowels	6	5.9	0.3	5.9	0.3	6.0	0.2	6.0	0.2
Consonant Blends	9	8.9	0.4	8.4	1.1	8.7	0.6	8.8	0.5
Blending Total	28	27.5	0.9	27.1	1.9	27.6	0.9	27.5	0.8
Vowel Combinations	9	8.2	1.1	8.2	1.0	8.0	1.3	8.0	1.0
Consonant Digraphs	6	5.8	0.5	5.8	0.6	5.8	0.4	5.7	0.6
Controlled Vowels	4	3.7	0.6	3.6	0.8	3.7	0.6	3.6	0.6
Larger Spelling Patterns	5	4.8	0.4	4.8	0.8	4.9	0.4	4.9	0.3
Sight Words	4	3.9	0.4	3.9	0.4	3.9	0.2	3.8	0.4
Chunking Total	28	26.4	2.1	26.2	3.0	26.3	2.2	26.0	2.0
Final e	6	5.6	0.8	5.4	1.1	5.6	0.7	5.4	0.8
Double Consonants	4	2.8	1.2	2.6	1.0	2.8	1.1	2.5	1.1
Open Syllables	4	3.8	0.4	3.7	0.7	3.8	0.5	3.8	0.4
Scanning Total	14	12.1	1.8	11.7	2.2	12.1	1.8	11.7	1.6
Morphemes	10	8.9	0.9	9.0	0.9	8.8	1.0	8.8	0.9
Linear Blending	6	5.8	0.5	5.7	0.5	5.9	0.4	5.8	0.4
Syntactic Units	7	6.8	0.5	6.8	0.6	6.9	0.3	6.8	0.4
Punctuation	4	3.9	1.2	3.9	1.1	3.6	1.3	3.7	1.2
Context (Total)	9	8.7	0.6	8.6	0.9	8.7	0.8	8.7	0.5
Context (Vocabulary)	4	3.9	0.3	3.9	0.4	4.0	0.2	4.0	0.3
Context (Sentences)	4	4.0	0.2	3.9	0.3	4.0	0.2	4.0	0.1
Sentence Questions	8	7.8	0.5	7.7	0.9	7.6	1.0	7.8	0.5
Reading for Meaning Total	45	42.0	2.3	41.7	3.4	41.4	2.6	41.6	2.3
Grand Total	115	108.1	5.9	106.7	9.7	107.4	5.6	106.9	4.8
Attitude:									
Attitude to School	9	7.8	2.0	8.1	1.4	8.0	2.0	7.9	1.5
Reading Preference	4	2.2	1.1	1.7	1.2	1.5	1.1	1.7	1.0
Math Preference	4	1.3	1.3	1.9	1.2	2.1	1.2	1.5	1.2
Social Studies Preference	4	1.8	1.1	1.3	1.2	1.5	1.1	1.7	1.1
Art Preference	4	3.2	1.2	3.3	1.0	3.2	1.2	3.5	1.0
Spelling Preference	4	1.4	1.0	1.8	1.1	1.6	1.1	1.6	1.0
Left-right Orientation	2	2.0	0.0	2.0	0.2	1.9	0.3	2.0	0.0
Scrambled Sentences	4	3.7	0.5	3.7	0.5	3.8	0.4	3.8	0.4
Individual Test Total	45	32.4	3.7	32.5	3.2	33.7	1.9	31.7	3.0
Metropolitan Achievement (raw scores)	40	34.7	4.8	33.6	6.0	34.9	4.6	33.5	4.8

Table I-61

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Non-target Follow-up Children in Fresno

Test and Subtest	No. of Items	EE N=26 M	EE N=26 SD	EC N=26 M	EC N=26 SD	CE N=21 M	CE N=21 SD	CC N=25 M	CC N=25 SD
Consonants	13	13.0	0.0	13.0	0.0	13.0	0.2	12.8	0.7
Vowels	6	6.0	0.0	5.9	0.3	6.0	0.2	5.8	0.8
Consonant Blends	9	8.9	0.3	8.8	0.6	9.0	0.2	8.7	1.0
Blending Total	28	27.9	0.3	27.8	0.7	27.9	0.4	27.3	2.4
Vowel Combinations	9	8.8	0.5	8.6	0.9	8.5	0.9	8.2	1.8
Consonant Digraphs	6	5.9	0.3	6.0	0.0	6.0	0.2	5.8	0.7
Controlled Vowels	4	3.9	0.3	3.8	0.5	3.8	0.4	3.6	0.8
Larger Spelling Patterns	5	4.9	0.3	5.0	0.2	4.9	0.3	4.7	0.8
Sight Words	4	4.0	0.0	4.0	0.0	4.0	0.0	3.8	0.8
Chunking Total	28	27.5	0.7	27.3	1.3	27.2	1.3	26.0	4.4
Final e	6	5.7	0.5	5.7	0.5	5.8	0.5	5.5	1.0
Double Consonants	4	2.7	1.1	2.6	1.0	2.9	1.0	2.8	0.9
Open Syllables	4	4.0	0.2	3.8	0.4	3.9	0.4	3.8	0.8
Scanning Total	14	12.4	1.4	12.2	1.5	12.6	1.5	12.0	2.3
Morphemes	10	9.4	0.8	9.1	0.7	9.2	0.8	8.8	2.0
Linear Blending	6	6.0	0.2	5.9	0.3	5.9	0.3	5.8	1.0
Syntactic Units	7	7.0	0.2	6.9	0.4	6.9	0.3	6.7	1.4
Punctuation	4	4.3	0.9	4.0	1.1	4.4	0.8	4.1	0.9
Context (Total)	9	8.7	0.6	8.8	0.5	8.8	0.7	8.4	1.8
Context (Vocabulary)	4	4.0	0.2	4.0	0.0	4.0	0.0	3.8	0.8
Context (Sentences)	4	3.9	0.3	4.0	0.0	4.0	0.0	3.8	0.8
Sentence Questions	8	8.0	0.2	8.0	0.2	8.0	0.2	7.6	1.6
Reading for Meaning Total	45	43.2	1.6	42.6	1.6	43.2	1.9	41.4	8.0
Grand Total	115	111.0	2.4	109.8	3.5	110.9	3.9	106.7	16.6
Attitude:									
Attitude to School	9	8.5	0.7	8.4	1.2	7.0	2.1	8.0	1.5
Reading Preference	4	2.2	1.0	1.8	1.2	1.9	1.2	2.0	1.2
Math Preference	4	1.6	1.3	1.8	1.3	1.6	1.4	1.9	1.3
Social Studies Preference	4	1.8	1.3	1.4	1.2	1.1	1.2	1.3	1.2
Art Preference	4	2.8	1.3	3.4	1.1	3.5	0.7	3.2	1.2
Spelling Preference	4	1.6	1.1	1.7	1.2	1.9	1.2	1.6	1.1
Left-right Orientation	2	2.0	0.0	2.0	0.0	2.0	0.0	1.9	0.4
Scrambled Sentences	4	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0
Individual Test Total	45	33.3	2.9	33.0	2.0	34.0	1.0	32.6	2.6
Metropolitan Achievement (raw scores)	50	34.6	6.9	33.7	7.2	36.0	7.5	34.4	8.8

Table I-62

Means and Standard Deviations on Tests and Subtests at Posttest, Year 2 for Second-Third Grade Non-target Follow-up Children in Youngstown

Test and Subtest	No. of Items	EE N=96 M	SD	EC N=62 M	SD	CE N=67 M	SD	CC N=60 M	SD
Consonants	13	12.9	0.3	12.8	0.5	13.0	0.0	12.9	0.3
Vowels	6	6.0	0.1	5.9	0.4	5.9	0.3	6.0	0.1
Consonant Blends	9	8.8	0.5	8.8	0.6	8.9	0.3	8.9	0.3
Blending Total	28	27.7	0.6	27.5	1.2	27.8	0.4	27.8	0.4
Vowel Combinations	9	8.6	0.7	8.4	0.9	8.5	0.7	8.5	1.0
Consonant Digraphs	6	5.9	0.3	5.9	0.5	5.9	0.3	6.0	0.2
Controlled Vowels	4	3.9	0.3	3.8	0.6	3.9	0.3	3.8	0.4
Larger Spelling Patterns	5	4.9	0.3	4.9	0.4	5.0	0.2	4.9	0.4
Sight Words	4	4.0	0.1	3.9	0.2	4.0	0.0	4.0	0.2
Chunking Total	28	27.3	1.0	27.0	2.2	27.3	0.9	27.1	1.7
Final e	6	5.9	0.3	5.6	0.8	5.7	0.6	5.6	0.6
Double Consonants	4	3.2	0.9	3.0	1.0	3.1	0.9	3.0	1.0
Open Syllables	4	4.0	0.2	3.9	0.6	4.0	0.2	3.9	0.4
Scanning Total	14	13.0	1.2	12.4	1.9	12.8	1.2	12.5	1.6
Morphemes	10	9.0	0.9	8.9	1.0	8.9	0.9	9.0	0.9
Linear Blending	6	5.9	0.3	5.9	0.5	5.9	0.3	6.0	0.2
Syntactic Units	7	6.9	0.2	7.0	0.3	7.0	0.0	7.0	0.2
Punctuation	4	4.5	0.7	4.6	0.7	4.3	1.0	4.3	0.9
Context (Total)	9	8.8	0.4	8.8	0.7	8.9	0.4	8.8	0.7
Context (Vocabulary)	4	4.0	0.1	3.9	0.3	3.9	0.2	4.0	0.2
Context (Sentences)	4	4.0	0.2	4.0	0.3	4.0	0.1	4.0	0.2
Sentence Questions	8	7.9	0.3	7.8	0.6	7.9	0.4	7.8	0.5
Reading for Meaning Total	45	43.1	1.5	43.0	2.7	42.9	1.7	42.8	1.8
Grand Total	115	111.2	3.4	109.8	7.0	110.8	3.1	110.2	4.0
Attitude:									
Attitude to School	9	7.6	1.9	7.6	1.9	7.6	2.1	7.6	1.9
Reading Preference	4	2.0	1.2	1.9	1.2	1.7	1.1	2.1	1.0
Math Preference	4	1.6	1.3	1.7	1.2	2.1	1.4	1.6	1.2
Social Studies Preference	4	1.5	1.1	1.3	1.1	1.6	1.2	1.6	1.1
Art Preference	4	3.3	1.2	3.2	1.1	2.9	1.4	3.4	1.1
Spelling Preference	4	1.7	1.0	2.0	1.2	1.6	1.0	1.4	1.1
Left-right Orientation	2	2.0	0.2	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.8	0.4	3.9	0.4	3.9	0.3	3.8	0.6
Individual Test Total	45	34.2	1.9	33.4	2.3	34.6	1.3	33.3	3.2
Metropolitan Achievement (raw scores)	50	38.3	7.3	36.3	7.9	37.8	6.0	38.0	6.8

TABLE I-63

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 2

Subtest and Item	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
MATCHING																
Sample (pictures)	100	100	100	100					100	100	99	100				
1. so	100	98	99	100					100	99	99	99				
2. bar	98	98	99	99					96	100	95	95				
3. top	91	94	93	96					96	97	90	95				
4. hit	98	92	93	95					91	90	95	92				
5. three	98	95	97	95					97	97	95	91				
6. latter	56	61	69	75					69	70	64	78				
7. crow	82	79	79	89					88	91	92	86				
8. past	89	88	88	89					93	98	92	96				
CONSONANTS																
Sample (h)	94	98	100	97	100	98	100	95	99	99	99	99	99	100	98	100
1. p	76	62	75	80	97	98	97	95	73	73	60	66	94	94	93	95
2. w	58	58	63	68	98	97	96	93	61	53	39	44	97	98	80	91
3. g (giraffe)	62	64	63	75	92	91	91	93	68	72	67	73	93	95	82	92
4. b	80	79	90	85	100	100	99	97	77	82	75	77	99	99	93	97
5. f	73	82	78	80	94	100	96	93	73	75	60	68	99	99	94	97
6. s	86	86	82	80	97	98	99	97	78	72	67	75	97	97	95	97
7. t	71	80	84	85	100	100	99	99	83	86	66	86	96	100	94	96
8. g (gorilla)	50	56	69	59	97	97	97	83	62	58	33	49	90	92	77	89
9. qu	21	24	25	20	71	67	63	67	33	23	15	28	73	77	32	57
10. ---k*					89	95	91	91					94	95	84	91
11. cat					98	98	100	99					98	99	94	97
12. ten					91	86	91	83					92	92	77	84
13. sip					67	58	45	37					71	66	41	46
VOWELS																
1. a					100	95	99	92					96	98	89	87
2. hat					74	85	81	84					78	88	66	73
3. pop					86	82	88	79					77	77	60	80
4. hit					86	82	79	71					81	76	54	72
5. bed					80	74	76	61					75	80	51	61
6. cry					91	83	82	76					80	88	56	81
CONSONANT BLENDS																
1. tr					97	92	100	96					98	100	89	100
2. cr					89	88	82	81					79	82	59	77
3. br					95	92	96	88					95	99	86	96
4. --mp					62	73	73	64					75	72	47	61
5. --nk					70	68	67	71					69	77	56	70
6. --lt					68	67	66	72					80	75	39	66
7. --nt					70	62	73	59					75	70	51	66
8. grass					82	73	91	80					77	73	43	73
9. clock					86	92	85	83					85	83	66	81
VOWEL COMBINATIONS																
1. foul					53	48	40	44					44	44	25	23
2. now					86	79	79	69					81	91	72	75
3. loin					27	36	46	39					34	36	17	23
4. ea = ee					50	41	37	49					43	44	36	41
5. ow = oa					42	30	21	32					31	30	39	20
6. ane = ain					41	27	36	35					36	36	17	33
7. feet					76	77	75	72					82	80	37	72
8. toe					71	67	58	57					65	62	34	47
9. boy					89	85	91	85					92	97	69	77

*---k = Ending sound

TABLE I-63

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 2

	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
CONSONANT DIGRAPHS																
1. ph					55	61	40	31					68	70	09	22
2. ch					74	67	75	68					74	82	43	67
3. th					79	76	72	67					66	84	48	61
4. wash					67	64	66	57					71	80	57	63
5. shake					61	53	45	44					49	41	22	32
6. chew					59	47	42	36					62	70	37	39
CONTROLLED VOWELS																
1. bard					55	50	51	56					50	57	39	47
2. turn					56	50	64	53					56	58	36	49
3. ir = er					30	23	24	27					30	28	22	18
4. burn					52	47	46	51					46	43	23	34
LARGER SPELLING PATTERNS																
1. tall					79	67	66	57					82	84	56	63
2. high					62	67	69	61					56	67	31	43
3. ball					86	82	81	88					94	94	86	85
4. talk					67	71	64	59					69	83	37	48
5. wing					64	48	48	48					58	58	33	46
SIGHT WORDS																
1. AVENUE					73	61	39	51					62	55	40	54
2. elevator					39	50	42	43					68	55	24	35
3. laugh					62	52	61	53					68	81	52	58
4. school					82	77	79	84					80	93	66	80
FINAL E																
1. mate					59	38	49	40					58	57	24	33
2. note					59	64	58	61					67	72	33	58
3. tone					56	39	42	44					58	51	34	38
4. kite					82	82	70	64					81	72	51	65
5. robe					36	29	19	29					41	39	05	13
6. fire					56	55	64	47					62	50	37	44
DOUBLE CONSONANTS																
1. latter					58	53	49	49					66	51	39	32
2. cutter					35	24	37	39					52	49	29	30
3. piner					38	32	34	29					29	28	17	22
4. toter					20	18	18	13					28	22	17	14
OPEN SYLLABLES																
1. so					80	80	78	73					71	70	53	66
2. hi					68	73	69	53					63	52	29	47
3. ee = he					79	88	91	80					79	85	70	81
4. oe = no					44	42	57	40					53	44	29	35
MORPHEMES																
1. est					91	95	94	99					97	94	86	94
2. ing					77	76	85	87					92	89	74	76
3. er					52	41	51	55					62	60	29	41
4. 's (poss.)					33	33	43	40					35	34	29	22
5. ed					50	53	58	57					66	62	36	48
6. ing					74	77	87	85					89	92	76	80
7. n't					61	61	64	64					76	76	47	65
8. n't					62	47	43	53					67	68	25	53
9. 's (is)					23	33	28	32					34	26	30	18
10. s (plural)					73	65	60	64					75	81	57	73

TABLE I-63

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 2

	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
LINEAR BLENDING																
1. He swings the bat.					83	65	63	63					73	83	57	70
2. She is wearing a skirt.					76	71	63	52					78	76	52	48
3. The car is white.					83	82	78	83					83	88	68	76
4. He is cleaning the horse.					38	52	40	40					59	60	38	51
5. The book is on the seat.					74	74	76	77					86	89	72	80
6. The waiter drops a dish.					36	39	22	31					42	39	20	30
SYNTACTIC UNITS																
1. noun					71	74	81	67					78	86	70	80
2. preposition					52	50	40	40					61	64	38	32
3. verb					62	50	61	57					86	86	60	70
4. preposition					53	47	54	44					71	78	37	56
5. adjective					58	48	57	59					72	78	47	62
6. verb phrase					79	68	82	79					81	86	54	70
7. adjective					74	61	75	63					85	84	62	68
PUNCTUATION																
1. cap and period					98	91	97	95					97	99	99	99
2. quotes					36	44	49	40					52	50	30	25
3. period, exclamation					64	48	39	43					73	74	45	46
4. commas					45	35	31	27					54	59	33	29
5. cap, question mark					24	18	27	25					41	34	23	27
CONTENT																
1. basketball					58	58	76	68					75	85	49	63
2. hippopotamus					65	62	52	39					63	65	24	46
3. refrigerator					53	48	52	51					64	62	31	42
4. helicopter					73	73	66	65					75	80	47	58
Sentences																
5. tricycle					74	70	75	69					77	83	45	56
6. refrigerator					61	62	69	71					75	72	47	58
7. hippopotamus					70	71	70	56					67	72	38	48
8. helicopter					71	73	63	65					72	80	37	61
9. basketball					82	85	84	79					86	97	80	77
SENTENCE QUESTIONS																
1. bus					67	74	61	47					77	77	41	72
2. animal					53	45	43	48					73	65	47	51
3. large					35	32	25	39					53	47	23	24
4. two					55	53	57	59					64	74	22	47
5. a ball					64	55	55	45					67	73	39	56
6. his father					45	44	51	53					68	69	25	51
7. a fish					41	48	33	41					52	47	31	34
8. a glass					36	32	31	40					49	53	34	33
EMOTIONS																
1. present (happy)					97	95	100	99					98	100	100	100
2. fall (sad)					94	98	100	92					98	99	97	97
3. drop lolly (sad)					92	98	94	91					99	99	98	96
4. break leg (sad)					95	95	97	92					100	100	99	99
5. eat ice cream (happy)					94	97	97	95					99	100	99	97
6. at party (happy)					98	92	97	99					99	98	100	96
ATTITUDE (% HAPPY)																
1. read book					92	97	93	96					96	94	89	94
2. write words					86	86	91	91					88	94	83	86
3. go to school					92	97	84	96					97	95	91	91
4. in class					86	89	85	89					96	90	78	91
5. talk to teacher					76	74	75	75					87	91	89	80
6. at library					89	94	99	92					99	99	90	97
7. answer in school					82	91	90	87					98	95	87	90
8. work in class					79	85	73	71					88	89	66	77
9. read aloud					62	71	64	65					85	78	67	78
look in mirror*					77	89	88	83					88	95	86	90

*Not included in any subtest

TABLE I-64

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 2

	FRESNO								YOUNGSTOWN							
	Year 2								Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
CONSONANTS																
Sample (pictures)	100	100	100	99	---	---	---	---	100	100	100	100	---	---	---	---
Sample (h)	100	100	100	100	100	100	100	100	100	100	96	100	100	100	100	100
1. p	98	100	94	95	98	98	100	99	94	99	90	96	95	99	99	96
2. w	95	98	100	96	100	100	98	99	96	98	85	95	100	100	99	99
3. g (giraffe)	94	93	92	97	94	97	97	100	92	95	88	86	96	99	98	97
4. b	100	100	100	100	100	100	100	97	100	99	94	100	100	100	99	100
5. f	100	98	96	95	98	98	100	96	98	99	98	99	100	100	98	100
6. s	100	98	98	99	100	100	100	99	98	95	92	97	100	100	95	99
7. t	98	100	100	99	100	100	100	100	100	100	98	100	100	100	100	100
8. g (gorilla)	98	98	92	88	97	92	98	99	92	96	80	91	90	98	94	96
9. qu	76	74	75	71	89	91	90	89	77	83	44	72	95	99	93	97
10. ---k*	95	94	91	95	97	98	98	97	91	94	87	87	98	98	93	94
11. cat	98	100	100	100	100	100	100	99	99	99	95	99	99	100	100	100
12. ten	88	95	96	83	92	98	94	88	83	93	78	82	92	96	90	92
13. sip	67	59	58	48	89	59	81	76	63	69	34	39	81	81	78	72
VOWELS																
1. a	100	98	100	99	98	100	100	100	98	95	95	96	100	100	98	99
2. hat	91	79	86	81	95	95	94	95	93	88	76	80	97	98	79	94
3. pop	79	89	85	85	94	95	94	87	81	86	66	70	93	98	80	94
4. hit	79	74	85	81	95	94	91	87	86	78	60	70	91	94	76	90
5. bed	85	79	79	73	83	83	88	85	75	82	64	75	86	92	84	90
6. cry	85	82	90	79	97	100	94	91	85	86	66	85	97	98	95	100
CONSONANT BLENDS																
1. tr	98	100	100	100	100	100	100	100	97	100	88	100	100	100	99	100
2. cr	94	92	85	85	92	98	92	89	83	85	64	70	96	99	78	91
3. br	98	98	97	95	100	100	100	99	96	96	88	92	99	99	100	100
4. --mp	68	68	82	71	86	86	79	75	72	68	44	66	83	84	69	72
5. --nk	73	62	73	56	88	89	81	85	79	73	52	78	86	89	74	84
6. --lt	79	82	86	80	92	89	88	87	74	75	48	62	87	88	75	81
7. --nt	67	70	79	73	89	86	84	84	67	74	41	66	84	88	66	85
8. grass	83	80	86	83	94	95	92	89	72	68	37	64	85	91	74	89
9. clock	83	80	91	89	92	86	90	91	82	83	59	81	91	92	75	96
VOWEL COMBINATIONS																
1. foul	64	44	39	45	71	68	70	59	82	39	22	35	66	73	47	59
2. now	83	88	85	77	92	92	96	93	72	91	72	78	99	96	78	94
3. loin	53	44	45	53	65	56	67	64	38	44	23	37	68	73	47	61
4. ea = ee	50	50	45	49	73	68	76	68	57	50	39	48	72	75	57	59
5. ow = oa	50	26	31	39	53	52	57	57	32	35	18	29	49	67	30	44
6. ane = ain	42	41	46	39	62	53	63	59	43	45	22	32	68	69	40	63
7. feet	73	90	85	80	92	97	96	95	81	83	38	70	94	95	85	84
8. toe	77	68	69	60	86	91	82	79	70	74	40	63	90	94	78	87
9. boy	89	86	91	84	94	98	92	95	89	95	79	86	97	100	92	97
CONSONANT DIGRAPHS																
1. ph	58	53	49	37	82	76	86	63	70	72	18	35	95	91	76	75
2. ch	76	76	76	71	94	92	92	88	76	91	41	66	95	94	83	91
3. th	82	68	75	72	89	89	91	85	78	83	53	64	92	89	72	86
4. wash	76	64	76	75	89	95	91	88	83	86	69	78	92	95	91	91
5. shake	62	58	52	45	73	71	79	71	55	56	16	37	74	75	45	66
6. chew	58	45	58	59	80	70	84	76	55	68	37	42	86	92	66	82
CONTROLLED VOWELS																
1. bard	62	53	64	52	77	76	82	69	59	62	46	43	82	82	49	81
2. turn	62	54	55	55	70	71	81	69	63	59	36	47	83	89	63	76
3. ir = er	24	33	28	29	48	48	48	49	34	36	25	28	58	52	30	46
4. burn	61	61	26	53	79	74	85	71	59	57	26	38	81	85	63	81

*---k = Ending sound

TABLE I-64

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 2

	FRESNO								YOUNGSTOWN							
	Year 2								Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
LARGER SPELLING PATTERNS																
1. tall	71	70	61	61	95	91	90	83	82	84	61	57	94	93	78	89
2. high	74	79	50	72	86	85	86	92	72	74	50	59	85	94	76	90
3. ball	85	68	74	75	89	91	94	89	87	90	74	80	95	96	92	92
4. talk	68	67	49	55	83	83	88	77	70	81	49	62	90	89	76	85
5. wing	59	59	46	57	73	73	81	71	64	65	46	59	75	80	71	73
SIGHT WORDS																
1. avenue	65	58	40	52	82	77	89	76	67	57	40	47	90	89	76	77
2. elevator	64	62	30	56	82	77	82	69	60	65	30	43	77	85	54	77
3. laugh	54	56	56	52	79	80	82	79	82	80	56	70	90	95	75	90
4. school	89	89	88	87	97	97	97	99	90	96	88	94	98	100	94	99
FINAL E																
1. mate	65	54	31	49	83	76	82	81	53	59	31	44	82	91	69	81
2. note	64	58	40	63	82	85	85	80	67	70	40	49	87	96	85	81
3. cone	58	47	31	47	77	67	81	71	64	59	31	42	76	86	50	76
4. kite	79	67	49	68	91	82	85	84	80	81	49	72	87	90	77	96
5. robe	35	44	11	27	56	44	49	47	36	31	11	15	60	50	29	34
6. tire	74	71	34	67	79	80	70	79	63	59	38	52	82	80	64	72
DOUBLE CONSONANTS																
1. latter	61	52	24	55	73	65	70	67	53	53	24	40	76	74	53	58
2. cutter	44	34	29	41	59	56	52	60	43	54	29	35	67	74	55	66
3. piner	33	36	37	28	32	21	37	31	28	27	37	33	37	32	25	38
4. toter	24	29	16	19	26	29	28	28	18	18	16	23	39	36	28	25
OPEN SYLLABLES																
1. so	80	79	76	73	85	82	88	81	72	80	61	68	92	92	79	94
2. hi	64	64	70	65	85	82	85	83	72	73	48	58	88	94	75	87
3. ee = he	85	88	84	76	86	94	97	87	88	89	71	78	95	92	84	95
4. oe = no	56	50	63	53	76	61	67	68	58	54	32	44	78	75	54	54
MORPHEMES																
1. est	98	100	96	95	98	98	98	99	95	99	93	91	99	100	98	99
2. ing	85	91	88	77	95	98	98	95	93	99	83	87	99	100	95	99
3. er	70	56	55	57	83	79	79	83	63	61	36	49	81	90	78	78
4. 's (possessive)	32	38	40	39	48	59	50	53	45	42	23	30	55	63	30	46
5. ed	65	68	64	56	80	82	80	87	68	76	38	47	86	90	76	82
6. ing	82	85	88	91	95	94	94	93	88	93	87	86	97	99	95	97
7. n't	73	65	72	65	82	88	85	85	70	85	41	63	88	94	82	90
8. n't	70	58	55	55	80	80	81	84	68	73	36	64	81	88	64	89
9. 's (is)	27	27	25	25	32	26	25	29	41	23	32	29	41	35	30	29
10. s (plural)	68	79	73	68	89	91	76	92	74	83	59	81	91	93	78	89
LINEAR BLENDING																
1. He swings the bat.	79	73	72	65	100	89	82	83	82	81	62	72	93	91	76	84
2. She is wearing a skirt.	70	59	64	48	89	76	82	76	78	72	54	51	91	88	76	76
3. The car is white.	85	86	79	80	94	92	96	95	86	89	71	82	100	96	95	94
4. He is cleaning the horse.	54	56	69	51	92	71	81	69	52	66	37	56	82	85	53	76
5. The book is on the seat.	79	77	86	80	89	94	91	92	90	93	71	78	97	98	86	96
6. The waiter drops a dish.	45	41	45	41	83	68	73	72	56	56	26	39	70	73	52	71
SYNTACTIC UNITS																
1. noun	86	76	90	76	88	85	88	88	86	83	69	82	87	93	85	86
2. preposition	61	54	57	52	82	79	81	77	68	75	31	52	85	90	69	84
3. verb	67	70	72	73	88	83	92	85	78	90	60	72	93	96	80	95
4. preposition	61	67	61	55	85	82	78	76	69	81	42	81	83	95	74	84
5. adjective	68	74	79	61	73	80	79	85	75	81	48	70	87	80	66	81
6. verb phrase	86	80	86	75	94	94	94	89	76	91	56	70	98	95	84	90
7. adjective	74	74	78	72	80	86	90	80	77	86	66	77	97	96	80	91

TABLE I-64

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 2

	FRESNO								YOUNGSTOWN							
	Year 2								Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
PUNCTUATION																
1. cap and period	98	94	98	92	97	100	98	95	95	98	96	100	100	100	99	97
2. quotes	42	53	58	56	73	65	76	64	49	42	29	42	72	76	57	71
3. period, exclamation	62	45	39	39	58	53	63	59	69	73	38	47	79	75	60	63
4. commas	41	45	31	41	76	58	79	64	56	56	36	35	62	77	74	66
5. cap, question mark	35	27	22	35	30	23	37	29	35	33	36	28	43	54	29	35
CONTEXT																
1. basketball	65	76	76	75	88	86	90	85	81	90	72	80	95	96	91	89
2. hippopotamus	70	68	69	60	85	86	88	79	65	74	34	63	90	85	69	82
3. refrigerator	58	59	61	47	76	76	78	67	70	72	39	52	84	91	52	73
4. helicopter	76	70	78	71	89	86	88	81	76	75	47	71	88	90	71	85
Sentences																
5. tricycle	83	77	85	76	92	86	86	88	83	82	63	70	92	98	74	92
6. refrigerator	62	70	69	67	86	89	81	88	76	83	48	62	88	94	75	86
7. hippopotamus	71	77	69	64	85	86	94	83	75	81	42	62	87	84	74	84
8. helicopter	84	76	79	71	94	86	88	84	75	81	53	58	86	92	80	86
9. basketball	88	89	88	85	94	95	94	93	87	96	80	82	99	99	85	96
SENTENCE QUESTIONS																
1. bus	67	56	61	63	82	76	86	80	72	89	68	72	88	93	75	92
2. animal	62	52	57	48	79	79	86	85	70	76	39	62	84	91	69	81
3. large	50	47	42	45	67	71	78	69	52	61	28	46	75	86	57	72
4. two	71	62	72	60	85	85	88	75	67	70	33	70	88	90	77	85
5. a ball	70	54	67	53	82	77	84	77	69	65	40	58	86	90	76	80
6. his father	62	59	63	59	85	85	82	80	70	70	38	59	85	56	79	91
7. a fish	59	53	57	56	82	77	81	77	61	60	29	39	85	88	74	78
8. a glass	48	47	46	56	80	80	70	76	53	67	36	47	82	84	57	77
EMOTIONS																
1. present (happy)	100	100	100	100	100	100	100	100	99	99	100	100	100	100	100	100
2. fall (sad)	97	98	97	97	98	98	98	97	99	99	98	95	99	96	99	96
3. drop lolly (sad)	95	98	92	97	98	94	96	97	98	98	98	97	97	99	95	97
4. break leg (sad)	95	95	97	97	95	95	100	97	97	94	95	96	96	96	95	97
5. eat ice cream (happy)	95	100	100	99	97	100	98	100	100	96	99	97	100	100	98	99
6. at party (happy)	97	100	98	97	98	98	98	97	99	100	96	99	100	98	95	100
ATTITUDE (% HAPPY)																
1. read book	94	95	91	92	94	95	85	96	96	92	93	94	97	95	93	96
2. write words	92	86	84	91	85	88	82	85	85	91	86	86	83	91	86	84
3. go to school	88	92	85	85	86	88	73	87	91	88	86	86	87	88	83	90
4. in class	91	91	88	88	91	89	84	93	89	90	84	85	90	91	83	94
5. talk to teacher	76	79	72	80	83	73	64	76	87	82	71	75	89	85	76	86
6. at library	95	97	97	96	95	98	97	96	99	100	95	96	99	98	96	100
7. answer in school	89	86	90	92	89	95	85	91	93	96	94	90	93	96	90	95
8. work in class	80	79	73	79	83	83	72	81	72	77	70	75	79	77	75	80
9. read aloud	73	74	67	75	80	71	75	84	78	82	76	80	85	88	84	85
look in mirror*	88	89	90	89	88	88	85	92	89	90	84	91	93	92	84	95

*Not included in any subtest

TABLE I-65

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 3

Subtest and Item	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
CONSONANTS																
Sample (h)	100	100	100	100	100	100	100	100	100	100	99	100	100	100	100	100
1. p	93	98	95	92	99	100	99	96	98	97	94	94	100	98	98	99
2. w	94	95	95	96	100	100	99	99	97	97	93	93	100	99	97	98
3. g (giraffe)	88	95	92	93	97	98	93	99	92	91	86	87	97	97	94	96
4. b	98	100	96	100	100	100	99	100	99	99	99	99	100	99	99	100
5. f	97	100	96	97	100	100	99	100	98	99	97	98	100	91	99	100
6. s	99	98	97	98	100	98	100	100	98	96	97	93	100	99	99	100
7. t	99	100	97	100	100	100	99	100	99	100	99	99	100	100	99	100
8. g (gorilla)	83	96	85	88	93	100	93	95	91	87	89	88	97	95	94	94
9. qu	53	64	50	48	96	95	82	84	74	66	59	56	97	95	92	92
10. ---k*	90	96	95	93	98	100	97	97	95	95	92	91	99	98	99	99
11. cat	99	100	100	99	100	100	100	100	100	99	98	100	100	99	100	100
12. ten	87	88	34	73	95	98	92	96	89	91	91	90	97	91	96	94
13. sip	29	45	46	39	79	82	64	61	53	36	42	39	78	74	67	60
VOWELS																
1. a	99	98	97	98	100	98	100	100	98	96	97	93	100	99	99	100
2. hat	81	86	73	66	97	91	92	87	89	84	80	82	98	95	97	94
3. pop	77	75	72	70	93	96	92	87	82	82	80	82	94	96	92	96
4. hit	68	66	72	64	95	95	82	84	80	71	65	63	94	92	89	89
5. bed	68	71	70	58	93	95	84	80	78	72	71	72	96	95	92	92
6. cry	81	86	76	71	98	100	93	92	87	82	76	77	100	98	98	94
CONSONANT BLENDS																
1. tr	100	100	100	99	100	98	100	96	100	100	100	100	100	100	99	100
2. cr	75	79	77	70	93	93	89	88	80	82	78	75	93	93	88	91
3. br	93	95	92	96	100	98	97	99	96	97	95	93	99	98	99	100
4. --mp	58	62	62	45	88	79	81	70	65	57	58	62	87	80	79	72
5. --nk	51	71	68	53	94	88	88	73	79	72	75	73	89	91	90	89
6. --lt	72	82	69	66	93	89	84	77	74	69	62	60	89	92	82	85
7. --nt	55	73	55	61	91	88	81	78	71	58	62	63	84	86	82	84
8. grass	74	82	68	69	94	89	96	92	66	62	62	67	88	85	79	85
9. clock	74	77	76	79	93	91	91	90	84	85	84	80	95	93	93	91
VOWEL COMBINATIONS																
1. foul	36	39	36	39	69	68	49	50	36	43	36	33	66	68	60	48
2. now	80	73	65	77	95	89	92	89	85	78	78	75	97	96	92	93
3. loin	31	20	35	31	64	52	54	46	28	30	34	26	63	64	55	43
4. ea = ee	33	41	32	43	75	62	59	51	38	39	40	38	67	65	57	57
5. ow = oa	29	21	30	37	52	48	46	37	35	31	33	32	53	48	48	30
6. ane = ain	21	29	26	32	58	64	47	43	36	27	26	29	65	58	54	50
7. feet	66	66	57	59	97	96	93	87	76	68	72	64	96	91	89	93
8. toe	57	68	64	63	85	84	78	80	68	68	57	53	91	90	84	85
9. boy	85	89	78	73	98	95	93	88	96	93	90	94	100	97	99	97
CONSONANT DIGRAPHS																
1. ph	17	23	30	23	87	80	57	47	27	27	28	14	97	95	66	57
2. ch	58	64	59	55	94	89	78	80	74	70	66	59	95	92	87	88
3. th	51	54	53	49	84	79	74	72	71	71	58	67	89	85	86	78
4. wash	58	62	65	61	91	93	91	79	81	74	68	71	92	94	89	86
5. shake	29	45	39	29	80	75	64	47	48	32	34	36	73	68	57	64
6. chew	32	29	39	27	86	79	62	66	59	54	52	44	91	84	79	76
CONTROLLED VOWELS																
1. bard	40	41	46	42	77	59	65	51	51	45	41	41	81	74	69	66
2. turn	41	59	50	46	75	86	72	62	54	49	50	44	84	87	76	75
3. ir = er	24	23	31	22	41	48	42	41	25	22	20	22	51	43	38	31
4. burn	38	39	45	41	81	73	66	52	43	42	41	30	77	73	75	65

*---k = Ending sound

TABLE I-65

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 3

	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
LARGER SPELLING PATTERNS																
1. tall	52	70	50	47	92	82	81	77	73	70	65	64	92	91	86	84
2. high	62	62	62	46	83	93	82	73	64	59	52	53	88	89	82	80
3. ball	65	61	62	65	94	91	80	78	86	88	84	88	94	97	93	89
4. talk	61	61	42	51	91	91	74	66	71	59	66	54	92	89	85	86
5. wing	40	50	59	42	80	77	64	67	60	55	46	50	79	79	70	70
SIGHT WORDS																
1. avenue	39	50	41	41	66	73	61	55	53	52	53	48	79	82	77	67
2. elevator	34	36	39	35	82	84	66	72	48	46	45	45	79	72	69	68
3. laugh	42	57	54	30	87	86	68	78	74	76	68	71	91	87	89	88
4. school	86	77	77	78	97	96	96	93	95	92	88	91	100	99	96	99
FINAL E																
1. mate	37	46	31	35	80	75	69	65	53	46	43	35	87	82	76	77
2. note	46	45	55	60	81	86	77	70	58	49	56	51	89	88	84	81
3. cone	30	41	47	44	78	75	66	55	43	39	41	35	72	80	69	62
4. kite	49	57	58	61	91	96	76	70	73	70	63	60	91	93	87	87
5. robe	16	12	11	15	59	59	38	29	15	20	18	14	55	49	32	34
6. tire	52	50	43	45	83	77	70	60	49	43	47	36	79	76	72	69
DOUBLE CONSONANTS																
1. latter	38	41	45	40	75	73	61	49	42	41	44	35	70	75	64	56
2. cutter	32	29	41	34	61	62	49	50	36	39	37	36	66	59	64	58
3. piner	29	39	32	26	28	45	38	26	31	38	28	32	36	41	37	39
4. toter	17	21	22	24	23	39	26	21	16	16	19	22	38	40	30	28
OPEN SYLLABLES																
1. so	73	71	62	66	83	84	86	86	77	67	62	69	87	90	84	84
2. hi	54	61	42	50	90	89	77	67	58	52	49	47	94	93	88	85
3. ee = he	82	89	76	79	90	91	89	94	84	84	82	78	96	91	92	92
4. oe = no	45	52	51	38	64	77	64	48	45	45	37	40	73	75	72	67
MORPHEMES																
1. est	90	95	93	94	100	100	99	96	93	95	93	91	100	99	99	100
2. ing	76	82	76	72	97	98	91	91	93	87	83	88	99	98	98	98
3. er	45	45	58	42	81	80	74	69	53	59	55	44	84	81	77	76
4. 's (possessive)	23	25	22	32	55	57	45	39	27	24	29	21	54	49	35	39
5. ed	31	41	42	46	83	84	76	73	66	57	48	57	89	83	82	82
6. ing	76	89	85	68	95	96	93	94	90	91	88	86	98	96	97	97
7. n't	38	55	43	42	88	89	78	63	74	62	63	55	90	87	85	85
8. n't	30	43	39	34	81	80	72	59	60	54	48	48	88	84	78	79
9. 's (is)	36	21	42	35	22	43	39	32	22	28	21	25	32	31	24	27
10. s (plural)	61	61	55	45	88	89	78	82	81	77	73	71	94	86	91	87
LINEAR BLENDING																
1. He swings the bat.	56	66	59	45	92	93	86	80	79	73	75	74	94	90	87	87
2. She is wearing a skirt.	56	55	61	52	85	75	80	72	65	60	63	61	89	86	78	76
3. The car is white.	75	84	64	68	93	98	82	92	87	82	83	82	97	96	96	96
4. He is cleaning the horse.	19	43	38	35	71	68	57	44	58	52	51	47	77	73	72	69
5. The book is on the seat.	68	70	64	55	93	93	89	88	87	84	82	84	97	96	94	94
6. The waiter drops a dish.	25	30	32	21	66	59	54	55	42	38	34	36	72	68	57	59
SYNTACTIC UNITS																
1. noun	67	77	64	59	89	88	78	83	84	77	82	75	93	90	88	86
2. prepostiion	29	54	39	37	81	79	69	57	57	45	48	43	91	87	75	75
3. verb	58	59	41	42	89	93	85	83	85	73	67	75	95	92	89	88
4. preposition	51	54	42	40	84	86	76	62	68	52	51	50	87	87	76	81
5. adjective	66	71	59	54	78	88	81	79	72	70	60	64	85	87	78	76
6. verb phrase	84	84	70	63	98	96	91	90	81	77	66	69	99	97	94	93
7. adjective	75	77	59	64	86	88	78	83	82	79	78	75	92	89	88	88

TABLE I-65

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 1 and Posttest, Year 1 in Fresno and Youngstown, Grade 3

	FRESNO								YOUNGSTOWN							
	Year 1								Year 1							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
PUNCTUATION																
1. cap and period	97	96	92	92	98	100	97	99	99	99	99	100	96	99	96	98
2. quotes	33	57	35	40	79	68	68	64	45	44	41	37	71	98	74	66
3. period, exclamation	44	39	45	35	64	62	49	51	58	47	46	51	80	97	74	53
4. commas	23	52	34	27	67	70	38	48	40	31	36	33	74	90	69	48
5. cap, question mark	21	11	19	21	34	41	28	28	28	27	28	26	50	98	44	31
CONTEXT																
1. basketball	57	64	55	48	91	91	85	80	79	76	80	80	97	93	93	94
2. hippopotamus	33	55	39	34	85	88	72	72	57	53	45	46	89	90	75	72
3. refrigerator	41	52	47	39	67	70	72	61	58	48	48	46	78	76	73	67
4. helicopter	60	70	58	64	85	89	77	80	69	65	64	63	87	88	79	78
Sentences																
5. tricycle	57	75	65	68	92	89	84	84	80	77	72	74	96	96	90	92
6. refrigerator	50	59	50	53	84	91	84	76	70	63	58	64	86	88	85	83
7. hippopotamus	44	62	47	44	86	93	78	74	61	47	44	47	90	88	82	75
8. helicopter	59	77	69	59	91	84	82	77	72	67	57	54	93	93	85	86
9. basketball	85	89	76	67	94	96	93	90	95	93	85	86	97	100	96	96
SENTENCE QUESTIONS																
1. bus	47	52	47	50	87	88	78	74	68	62	60	54	88	86	87	78
2. animal	48	66	42	44	83	82	76	69	67	60	57	50	90	86	83	75
3. large	33	38	24	32	65	66	74	56	48	38	35	36	82	78	69	67
4. two	44	50	54	46	87	86	69	67	62	57	47	52	91	68	85	80
5. a ball	45	54	49	41	83	79	65	73	61	51	51	50	86	81	77	77
6. his father	41	55	50	42	90	84	72	66	65	46	52	40	94	89	85	84
7. a fish	38	50	38	44	80	79	68	67	47	34	37	30	85	82	74	70
8. a glass	26	38	30	32	70	79	66	52	51	40	48	38	82	76	68	68
EMOTIONS																
1. present (happy)	98	100	100	99	99	98	99	100	100	100	99	100	100	99	99	99
2. fall (sad)	97	96	99	98	96	98	95	99	98	99	99	99	99	98	98	98
3. drop lolly (sad)	96	96	100	99	93	98	93	97	98	99	98	98	99	98	99	97
4. break leg (sad)	97	100	95	99	93	98	93	97	97	99	99	98	96	97	97	96
5. eat ice cream (happy)	97	100	100	99	96	100	100	98	96	99	100	97	97	98	99	100
6. at party (happy)	99	100	97	94	96	100	100	94	98	98	98	99	99	100	98	97
ATTITUDE (% HAPPY)																
1. read book	90	88	89	91	93	91	88	92	93	99	93	95	95	97	95	93
2. write words	77	82	74	85	83	88	73	86	85	84	86	84	85	90	85	80
3. go to school	88	95	86	91	85	91	85	95	92	93	91	87	79	90	87	85
4. in class	87	93	88	94	85	91	85	92	89	93	89	86	87	88	87	86
5. talk to teacher	83	89	69	70	73	77	73	80	81	86	80	82	88	84	83	83
6. at library	92	91	95	96	98	96	95	97	95	99	99	96	97	96	99	96
7. answer in school	89	91	82	88	89	93	89	91	93	95	90	91	93	95	92	93
8. work in class	67	68	64	62	71	79	76	79	80	80	79	69	83	84	82	83
9. read aloud	65	57	62	71	75	70	76	73	87	84	79	76	90	85	87	82
look in mirror*	84	84	78	84	87	89	84	91	91	90	93	88	90	95	92	90

*Not included in any subtest

TABLE I-66

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 3

	FRESNO								YOUNGSTOWN							
	Year 2								Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
CONSONANTS																
Sample (pictures)	100	100	100	99	---	---	---	---	100	100	100	100	---	---	---	---
Sample (h)	100	100	100	100	100	100	100	100	100	99	100	100	100	100	100	100
1. p	98	100	100	98	99	100	100	98	99	98	97	98	100	99	99	100
2. w	99	100	100	100	99	100	100	99	100	99	99	98	100	99	98	100
3. g (giraffe)	95	98	91	98	99	100	97	97	95	97	97	95	99	97	99	98
4. b	100	100	100	100	100	100	100	99	100	100	100	100	100	100	99	100
5. f	100	100	100	100	100	100	100	99	100	99	100	100	100	100	100	100
6. s	99	100	100	100	100	100	100	99	100	99	99	100	100	100	100	100
7. t	100	100	100	100	100	100	100	98	100	99	99	100	100	100	100	100
8. g (gorilla)	95	98	93	95	97	98	92	93	95	92	96	94	97	93	97	96
9. qu	93	98	92	87	98	98	95	95	97	96	93	97	99	97	97	99
10. ---k*	98	100	99	97	99	100	97	98	99	97	99	98	100	99	99	100
11. cat	100	100	100	100	100	100	100	99	99	100	99	100	100	99	100	100
12. ten	97	93	95	91	96	100	96	92	95	92	92	95	98	96	97	98
13. sip	82	75	68	59	93	86	92	78	73	69	65	55	88	81	88	75
VOWELS																
1. a	99	100	100	100	100	100	100	99	100	99	99	100	100	100	100	100
2. hat	94	96	89	88	98	98	91	97	99	97	95	93	98	96	98	98
3. pop	97	93	93	93	97	98	99	90	97	97	94	93	99	95	96	97
4. hit	91	95	86	91	98	95	95	92	93	91	86	87	97	97	94	94
5. bed	86	89	84	81	95	95	92	85	95	90	87	93	97	93	94	94
6. cry	95	100	95	97	100	98	99	98	99	96	96	96	100	100	99	99
CONSONANT BLENDS																
1. tr	100	100	100	99	100	100	99	98	100	99	100	99	100	99	99	100
2. cr	99	93	91	94	95	98	97	94	94	92	90	91	97	98	95	93
3. br	100	100	99	99	100	98	100	98	100	98	98	99	100	100	100	99
4. --mp	84	86	82	74	90	88	86	80	80	75	71	76	91	86	84	87
5. --nk	91	88	77	91	99	91	93	92	92	86	89	89	96	95	93	95
6. --lt	97	91	86	87	99	96	89	90	91	89	88	83	98	98	95	95
7. --nt	94	88	78	82	97	95	89	84	86	84	87	84	95	91	89	93
8. grass	90	95	92	92	95	98	93	90	84	79	80	80	97	93	91	93
9. clock	86	96	92	90	92	96	91	94	93	91	91	92	96	92	96	95
VOWEL COMBINATIONS																
1. foul	74	66	59	50	81	77	66	65	74	68	52	51	79	73	71	67
2. now	97	98	93	84	98	98	96	95	96	97	94	93	99	99	95	97
3. loin	67	66	53	57	75	80	62	69	71	70	59	58	84	75	80	69
4. ea = ee	65	75	55	60	80	80	77	72	75	74	65	59	87	76	78	78
5. ow = oa	52	43	51	34	70	64	62	51	50	51	50	47	67	64	60	47
6. ane = ain	59	68	55	44	77	77	65	47	68	63	52	57	76	77	65	69
7. feet	94	96	89	87	100	100	96	95	97	93	89	94	99	98	97	99
8. toe	94	95	84	85	97	95	95	88	94	91	87	90	99	96	96	93
9. boy	97	98	93	96	94	100	96	97	99	99	95	99	100	100	99	99
CONSONANT DIGRAPHS																
1. ph	89	86	64	51	96	93	86	78	94	95	75	72	99	95	93	89
2. ch	95	96	89	85	100	98	93	89	95	95	85	86	100	97	97	94
3. th	83	82	65	71	90	93	85	85	88	87	82	74	95	92	90	85
4. wash	93	98	82	77	97	96	92	89	97	93	90	94	100	97	98	98
5. shake	75	77	58	57	75	86	68	68	74	76	69	64	84	76	76	75
6. chew	80	75	69	63	90	95	84	82	90	82	79	76	97	93	93	93
CONTROLLED VOWELS																
1. bard	77	70	70	61	86	82	74	76	89	78	73	74	94	92	88	87
2. turn	79	80	80	67	80	96	78	79	84	82	77	70	94	92	85	88
3. ir = er	40	45	45	39	63	62	61	46	53	52	45	37	75	69	59	53
4. burn	79	82	76	61	91	95	84	79	87	80	72	72	95	91	88	90

*---k = Ending sound

TABLE I-66

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 3

	FRESNO Year 2								YOUNGSTOWN Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
LARGER SPELLING PATTERNS																
1. tall	95	88	80	79	99	96	88	90	95	91	89	88	98	95	95	95
2. high	90	93	84	78	91	96	95	89	90	88	82	87	96	96	93	93
3. ball	87	89	77	69	94	93	88	86	96	95	91	95	98	95	95	98
4. talk	84	88	74	71	96	89	85	79	93	88	82	85	97	92	94	95
5. wing	71	82	76	69	84	95	81	80	78	72	73	66	86	81	80	84
SIGHT WORDS																
1. avenue	75	89	77	56	96	96	89	78	82	84	75	75	95	92	93	89
2. elevator	85	89	68	74	91	91	88	82	83	77	70	68	95	90	90	87
3. laugh	90	82	70	79	95	91	88	88	92	86	87	81	97	92	93	94
4. school	100	98	97	97	99	100	97	98	100	98	98	98	100	99	98	100
FINAL E																
1. mate	87	91	70	72	90	93	81	82	90	86	80	75	95	90	91	86
2. note	87	95	77	68	92	93	91	86	94	93	83	90	99	93	93	94
3. cone	77	82	70	63	91	86	77	71	82	73	74	67	91	85	84	83
4. kite	90	89	81	81	96	96	95	87	95	91	85	89	97	94	93	94
5. robe	55	52	31	30	57	66	55	38	53	46	35	28	65	53	47	42
6. tire	77	71	70	61	85	95	76	81	79	73	70	70	95	77	81	84
DOUBLE CONSONANTS																
1. latter	72	70	54	57	77	73	61	65	72	69	57	60	85	80	76	73
2. cutter	59	57	42	47	70	73	66	66	64	64	61	64	85	79	80	79
3. piner	34	18	34	29	31	27	36	28	40	34	35	34	42	32	37	34
4. toter	31	38	32	28	33	34	42	34	44	35	35	35	47	47	45	43
OPEN SYLLABLES																
1. so	90	93	91	80	93	95	93	85	93	87	83	86	96	95	90	90
2. hi	88	93	76	76	96	96	89	86	94	91	87	89	97	95	95	94
3. ee = he	94	98	86	84	93	98	93	95	95	91	93	92	98	96	97	95
4. oe = no	78	82	68	63	82	84	78	69	78	74	68	70	88	86	82	73
MORPHEMES																
1. est	100	98	100	98	100	98	100	98	100	99	99	99	100	100	100	100
2. ing	95	98	96	90	99	100	99	95	100	97	95	98	100	99	100	100
3. er	79	86	78	79	97	95	89	88	89	88	82	78	94	94	86	88
4. 's (possessive)	53	61	36	36	57	62	43	51	49	46	38	39	53	46	47	44
5. ed	92	86	82	79	93	91	85	86	90	85	83	85	96	92	89	89
6. ing	97	98	96	95	100	100	96	97	97	97	97	96	99	99	99	99
7. n't	88	95	80	72	96	96	89	89	95	89	85	85	98	95	95	95
8. n't	80	91	72	68	92	96	81	82	89	86	77	80	95	90	88	89
9. 's (is)	29	30	31	32	33	46	35	35	31	31	24	26	38	32	29	32
10. s (plural)	90	91	81	80	95	95	91	87	95	90	89	92	96	96	97	95
LINEAR BLENDING																
1. He swings the bat.	90	93	85	86	94	96	91	92	96	87	88	90	95	95	93	95
2. She is wearing a skirt.	85	89	73	69	87	93	89	87	89	83	81	81	94	92	90	87
3. The car is white.	95	96	95	90	97	98	97	94	97	97	96	96	99	97	98	97
4. He is cleaning the horse.	71	73	65	67	85	84	78	77	81	78	75	72	87	82	83	84
5. The book is on the seat.	96	95	92	88	99	98	95	94	96	95	93	93	98	97	99	100
6. The waiter drops a dish.	75	70	69	59	89	82	78	74	81	74	63	65	91	87	82	79
SYNTACTIC UNITS																
1. noun	92	95	80	81	94	98	95	91	91	92	87	91	98	96	95	95
2. preposition	87	91	70	65	94	93	85	87	94	88	81	84	97	95	94	92
3. verb	96	98	86	84	97	95	89	93	96	92	92	92	98	97	96	97
4. preposition	86	93	82	78	93	95	88	88	88	87	81	84	96	93	93	91
5. adjective	83	80	85	83	91	86	81	90	91	81	86	83	93	88	86	87
6. verb phrase	94	96	88	94	99	98	93	93	98	96	93	91	98	97	98	98
7. adjective	92	93	82	89	94	96	88	89	90	88	88	90	93	95	92	96

TABLE I-66

Mean Percentage in Viewing and Non-viewing Classes Answering Each Item Correctly on the Pretest, Year 2 and Posttest, Year 2 in Fresno and Youngstown, Grade 3

	FRESNO								YOUNGSTOWN							
	Year 2								Year 2							
	Pretest				Posttest				Pretest				Posttest			
Subtest and Item	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC	EE	EC	CE	CC
PUNCTUATION																
1. cap and period	99	100	99	100	98	98	99	100	99	97	99	99	99	98	99	95
2. quotes	79	64	62	70	88	91	84	85	75	76	63	67	90	91	83	82
3. period, exclamation	60	66	53	53	65	68	64	61	74	70	56	58	80	78	66	65
4. commas	64	59	55	43	88	71	81	68	72	66	58	53	93	85	84	75
5. cap, question mark	44	46	36	27	51	68	50	49	47	46	32	33	65	67	56	44
CONTEXT																
1. basketball	89	91	85	88	100	96	93	99	97	97	93	94	99	97	96	97
2. hippopotamus	66	88	81	69	93	95	89	84	91	89	80	80	95	95	91	87
3. refrigerator	78	84	77	71	91	91	85	72	84	80	75	73	95	90	92	86
4. helicopter	86	91	84	77	96	95	88	87	92	88	81	86	97	95	96	96
Sentences																
5. tricycle	97	98	89	89	97	96	95	96	97	95	94	93	99	98	97	98
6. refrigerator	92	96	81	73	94	98	86	83	93	90	87	83	97	95	93	93
7. hippopotamus	89	89	86	79	95	96	85	88	93	89	82	86	96	95	93	93
8. helicopter	92	93	86	87	98	98	93	94	95	92	86	87	99	97	97	97
9. basketball	96	98	92	93	97	100	96	94	99	98	96	97	99	98	98	100
SENTENCE QUESTIONS																
1. bus	82	86	73	70	88	95	77	87	92	86	81	85	97	95	92	96
2. animal	86	89	84	76	94	100	93	83	93	82	83	79	98	94	91	94
3. large	74	84	69	62	84	93	84	78	87	79	76	75	97	88	84	89
4. two	77	89	76	70	92	93	91	86	92	85	84	85	98	95	93	95
5. a ball	89	88	77	80	88	96	84	90	92	83	80	78	94	88	88	88
6. his father	90	91	73	79	94	96	82	88	95	85	83	84	98	96	93	93
7. a fish	85	82	74	70	93	93	89	87	90	83	76	78	98	96	95	92
8. a glass	81	80	72	67	84	91	81	83	81	79	76	74	95	90	85	89
EMOTIONS																
1. present (happy)	100	100	100	99	99	100	100	100	100	100	98	99	100	98	99	99
2. fall (sad)	96	98	97	98	100	98	100	99	97	97	97	97	95	95	96	98
3. drop lolly (sad)	92	95	93	96	95	98	93	97	95	94	98	95	92	94	96	93
4. break leg (sad)	93	100	93	96	96	98	88	98	93	97	95	98	90	91	93	93
5. eat ice cream (happy)	98	100	99	100	100	98	99	96	97	98	98	99	95	97	98	97
6. at party (happy)	98	96	99	99	100	100	99	100	97	98	98	98	96	97	97	98
ATTITUDE (% HAPPY)																
1. read book	93	98	86	95	88	93	89	94	93	93	95	91	87	93	91	85
2. write words	83	89	74	92	89	88	82	88	80	82	79	85	79	80	77	75
3. go to school	88	95	82	91	86	91	70	88	78	78	87	78	68	73	70	74
4. in class	79	93	84	92	87	89	78	85	83	86	83	82	78	82	77	83
5. talk to teacher	80	80	73	81	87	79	80	88	85	79	86	79	79	82	82	79
6. at library	95	96	99	99	96	98	89	96	95	96	96	98	97	95	97	95
7. answer in school	95	93	96	95	92	91	89	95	91	91	89	93	90	91	88	87
8. work in class	84	93	84	74	82	89	78	86	82	79	81	76	81	71	77	71
9. read aloud	77	79	66	81	80	74	74	85	84	84	83	84	79	81	80	81
look in mirror*	89	95	88	92	92	96	89	88	90	91	94	93	88	89	89	91

*Not included in any subtest

TABLE I-67

Pretest and Posttest Scores on Tests and Subtests for New Children in Fresno, Grade 2

Test and Subtest	No. of Items	Experimental N=114				Control N=141			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	11.6	1.8	12.4	1.2	11.8	1.3	12.5	0.8
Vowels	6	4.9	1.3	5.6	0.9	5.0	1.3	5.6	0.8
Consonant Blends	9	7.3	2.0	8.1	1.4	7.2	1.9	8.2	1.2
Blending Total	28	23.8	4.5	26.1	3.0	24.0	3.9	26.2	2.4
Vowel Combinations	9	5.1	2.1	6.7	2.0	5.2	2.1	6.7	2.0
Consonant Digraphs	6	3.3	2.0	4.9	1.4	3.6	1.8	4.8	1.4
Controlled Vowels	4	1.7	1.1	2.5	1.3	1.9	1.2	2.7	1.2
Larger Spelling Patterns	5	3.2	1.4	4.2	1.1	3.4	1.4	4.2	1.1
Sight Words	4	2.4	1.1	3.3	0.9	2.5	1.3	3.3	1.0
Chunking Total	28	15.6	6.2	21.7	5.4	16.7	6.5	21.8	5.6
Final e	6	3.1	1.8	4.5	1.6	3.2	1.9	4.3	1.7
Double Consonants	4	1.3	1.0	1.8	1.0	1.4	0.9	1.8	1.1
Open Syllables	4	2.6	1.3	3.3	0.9	2.7	1.1	3.2	0.9
Scanning Total	14	6.9	3.0	9.6	2.8	7.2	3.2	9.4	2.9
Morphemes	10	6.2	2.2	7.8	2.1	6.5	2.3	8.0	1.8
Linear Blending	6	3.6	1.6	4.7	1.4	3.9	1.7	5.0	1.3
Syntactic Units	7	4.5	2.0	5.8	1.6	4.7	2.0	5.9	1.5
Punctuation	5	1.8	1.2	2.8	1.4	2.0	1.2	2.5	1.4
Context (Total)	9	5.7	2.6	7.2	2.1	5.9	2.4	7.5	2.0
Context (Vocabulary)	4	2.6	1.3	3.3	1.1	2.7	1.3	3.3	1.2
Context (Sentences)	4	2.8	1.4	3.3	1.1	2.9	1.3	3.5	1.0
Sentence Questions	8	4.1	2.4	5.9	2.6	4.3	2.3	6.2	2.2
Reading for Meaning Total	45	26.0	9.8	34.1	9.2	27.2	9.5	35.2	8.1
Grand Total	115	72.4	21.6	91.5	19.0	75.2	21.5	92.5	17.7
Attitude:									
Attitude to School	9	8.0	1.2	7.9	1.4	7.8	1.4	7.8	1.5
Reading Preference	4	2.0	1.0	2.0	1.1	2.1	1.1	2.1	1.0
Math Preference	4	1.6	1.2	1.5	1.3	1.6	1.1	1.7	1.2
Social Studies Preference	4	1.8	1.3	1.9	1.2	1.2	1.1	1.3	1.2
Art Preference	4	3.0	1.3	3.2	1.2	3.1	1.2	3.3	1.1
Spelling Preference	4	1.5	1.0	1.4	0.9	1.8	1.0	1.6	0.9
Left-right Orientation	2	1.8	0.5	1.9	0.4	1.6	0.7	1.9	0.3
Scrambled Sentences	4	1.9	1.5	3.1	1.1	2.1	1.5	3.1	1.2
Individual Test Total	36	19.5	10.6	27.5	8.6	21.1	10.2	28.0	7.5
Metropolitan Achievement (raw scores)	---	(35 items) 23.9	7.2	(40 items) 24.1	9.0	(35 items) 24.4	7.6	(40 items) 24.7	9.1

TABLE I-68

Pretest and Posttest Scores on Tests and Subtests for New Children in Youngstown, Grade 2

Test and Subtest	No. of Items	Experimental N=94				Control N=81			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	10.9	1.9	12.3	0.9	10.8	1.9	12.2	1.1
Vowels	6	4.3	1.4	5.4	1.0	4.2	1.7	5.4	0.8
Consonant Blends	9	5.7	2.0	7.6	1.7	5.9	1.9	7.6	1.6
Blending Total	28	20.9	4.5	25.3	3.0	20.9	4.7	25.2	3.1
Vowel Combinations	9	4.1	2.1	6.3	1.9	4.0	1.7	6.0	1.9
Consonant Digraphs	6	2.8	1.7	4.7	1.5	2.8	1.6	4.5	1.4
Controlled Vowels	4	1.4	1.2	2.3	1.2	1.3	1.0	2.4	1.2
Larger Spelling Patterns	5	2.9	1.3	4.0	1.2	3.1	1.1	4.0	1.1
Sight Words	4	2.3	1.1	3.0	1.0	2.4	1.0	3.1	1.0
Chunking Total	28	13.6	6.2	20.4	5.7	13.5	4.5	20.0	5.2
Final e	6	2.4	1.7	4.2	1.5	2.1	1.4	3.8	1.7
Double Consonants	4	1.2	0.9	1.7	1.2	1.0	0.9	1.6	1.2
Open Syllables	4	2.3	1.2	3.3	0.9	2.0	1.2	3.1	1.1
Scanning Total	14	5.9	2.8	9.3	2.9	5.1	2.5	8.5	3.2
Morphemes	10	5.4	2.2	7.5	1.8	5.5	2.0	7.3	1.5
Linear Blending	6	3.3	1.6	4.5	1.5	3.4	1.6	4.5	1.5
Syntactic Units	7	4.2	2.2	5.8	1.5	4.1	2.0	5.8	1.5
Punctuation	5	1.9	1.2	2.9	1.3	1.6	1.0	2.3	1.3
Context (Total)	9	4.8	2.9	7.2	1.9	5.0	2.5	7.0	2.0
Context (Vocabulary)	4	2.0	1.3	3.1	1.2	2.0	1.2	3.0	1.1
Context (Sentences)	4	2.3	1.5	3.4	0.8	2.5	1.4	3.2	1.0
Sentence Questions	8	3.4	2.2	6.1	2.1	3.4	2.2	6.0	2.0
Reading for Meaning Total	45	22.9	9.7	33.9	8.1	23.0	8.3	32.8	7.6
Grand Total	115	63.3	21.6	88.8	18.4	62.5	17.9	86.5	17.1
Attitude:									
Attitude to School	9	7.5	1.8	7.6	1.7	7.4	1.6	8.0	1.2
Reading Preference	4	1.9	1.1	2.0	1.0	1.8	1.1	1.8	1.0
Math Preference	4	1.4	1.1	1.5	1.2	1.6	1.1	1.7	1.1
Social Studies Preference	4	1.6	1.1	1.7	1.1	1.6	1.0	1.6	1.1
Art Preference	4	3.1	1.1	3.3	1.2	3.3	1.1	3.5	1.0
Spelling Preference	4	1.7	1.0	1.5	1.1	1.6	0.9	1.5	1.1
Left-right Orientation	2	1.9	0.4	2.0	0.0	2.0	0.2	2.0	0.0
Scrambled Sentences	4	2.0	1.4	3.2	1.2	2.1	1.4	3.3	1.1
Individual Test Total	36	18.6	8.5	27.3	6.7	16.9	7.5	27.4	7.4
Metropolitan Achievement (raw scores)	---	(35 items)		(40 items)		(35 items)		(40 items)	
		20.9	7.9	23.4	9.0	20.2	7.6	22.6	8.6

TABLE I-69

Pretest and Posttest Scores on Tests and Subtests for New Children in Fresno, Grade 3

Test and Subtest	No. of Items	Experimental N=116				Control N=152			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.5	0.8	12.8	0.6	12.4	1.2	12.5	0.9
Vowels	6	5.7	0.6	5.9	0.5	5.5	1.0	5.7	0.8
Consonant Blends	9	8.4	1.1	8.6	0.9	8.1	1.3	8.4	1.1
Blending Total	28	26.6	2.0	27.3	1.6	26.1	3.0	26.7	2.4
Vowel Combinations	9	7.1	1.9	7.9	1.4	6.4	2.0	7.3	1.8
Consonant Digraphs	6	5.2	1.3	5.6	0.7	4.8	1.6	5.1	1.2
Controlled Vowels	4	3.0	1.2	3.3	0.9	2.6	1.2	3.0	1.1
Larger Spelling Patterns	5	4.2	1.1	4.7	0.7	4.0	1.2	4.5	0.9
Sight Words	4	3.5	0.9	3.8	0.5	3.2	1.0	3.6	0.8
Chunking Total	28	23.1	5.3	25.4	3.5	21.0	5.8	23.4	5.0
Final e	6	4.6	1.6	5.3	1.0	4.3	1.6	4.8	1.5
Double Consonants	4	1.8	1.1	2.4	1.1	1.7	1.1	2.0	1.1
Open Syllables	4	3.4	0.8	3.7	0.7	3.2	1.0	3.4	0.9
Scanning Total	14	9.9	2.8	11.4	2.2	9.3	3.0	10.3	2.7
Morphemes	10	8.3	1.8	8.9	1.2	7.9	1.8	8.4	1.6
Linear Blending	6	5.1	1.2	5.5	1.0	4.6	1.5	5.3	1.2
Syntactic Units	7	6.3	1.4	6.5	1.1	5.9	1.6	6.4	1.2
Punctuation	5	2.9	1.3	3.8	1.2	2.6	1.3	3.4	1.4
Context (Total)	9	7.7	1.8	8.3	1.1	7.2	2.1	7.9	1.7
Context (Vocabulary)	4	3.6	0.8	3.9	0.5	3.3	1.2	3.4	1.1
Context (Sentences)	4	3.6	0.9	3.9	0.5	3.5	1.0	3.7	0.8
Sentence Questions	8	6.6	2.1	7.3	1.5	6.4	2.2	7.1	1.8
Reading for Meaning Total	45	36.9	8.0	40.3	5.4	34.6	8.6	38.6	7.4
Grand Total	115	96.5	16.8	104.3	11.6	91.1	18.9	100.0	16.1
Attitude:									
Attitude to School	9	7.8	1.7	7.9	1.6	8.1	1.3	8.1	1.4
Reading Preference	4	2.1	1.0	2.1	1.2	2.0	1.0	1.9	1.2
Math Preference	4	1.5	1.3	1.7	1.3	1.7	1.2	1.7	1.2
Social Studies Preference	4	1.7	1.3	1.5	1.3	1.5	1.3	1.4	1.3
Art Preference	4	3.1	1.3	3.1	1.2	3.2	1.2	3.2	1.2
Spelling Preference	4	1.6	1.1	1.6	0.9	1.7	1.1	1.7	1.0
Left-right Orientation	2	2.0	0.2	2.0	0.0	2.0	0.0	2.0	0.0
Scrambled Sentences	4	3.5	1.2	3.8	0.6	3.1	1.1	3.7	0.6
Individual Test Total	36	28.6	6.5	31.3	3.7	28.1	6.2	31.3	4.4
Metropolitan Achievement	---	(40 items)		(50 items)		(40 items)		(50 items)	
(raw scores)		27.8	9.7	28.2	11.4	25.7	9.3	25.6	10.1

TABLE I-70

Pretest and Posttest Scores on Tests and Subtests for New Children in Youngstown, Grade 3

Test and Subtest	No. of Items	Experimental N=137				Control N=169			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Consonants	13	12.1	1.0	12.6	0.7	12.2	1.2	12.6	0.8
Vowels	6	5.4	1.1	5.7	0.7	5.5	1.0	5.7	0.7
Consonant Blends	9	7.6	1.6	8.3	1.3	7.5	1.7	8.2	1.3
Blending Total	28	25.1	3.1	26.6	2.3	25.1	3.4	26.4	2.4
Vowel Combinations	9	6.1	1.9	7.3	1.7	6.4	2.0	7.1	1.9
Consonant Digraphs	6	4.5	1.6	5.4	1.0	4.7	1.5	5.2	1.3
Controlled Vowels	4	2.5	1.4	3.1	1.1	2.4	1.3	3.2	1.0
Larger Spelling Patterns	5	3.9	1.2	4.5	0.7	4.1	1.1	4.4	0.9
Sight Words	4	3.1	1.1	3.6	0.7	3.2	1.0	3.5	0.8
Chunking Total	28	20.1	6.0	24.0	4.4	20.7	5.9	23.3	4.9
Final e	6	4.0	1.7	4.8	1.4	4.1	1.7	4.7	1.4
Double Consonants	4	1.8	1.1	2.3	1.2	1.8	1.1	2.1	1.1
Open Syllables	4	3.1	1.0	3.6	0.8	3.2	1.0	3.5	0.8
Scanning Total	14	8.9	3.2	10.7	2.7	9.1	3.1	10.3	2.8
Morphemes	10	7.5	2.0	8.2	1.5	7.4	1.8	8.1	1.5
Linear Blending	6	4.6	1.5	5.2	1.1	4.7	1.4	5.1	1.2
Syntactic Units	7	5.7	1.7	6.4	1.1	5.8	1.6	6.3	1.3
Punctuation	5	2.6	1.4	3.5	1.3	2.4	1.3	3.4	1.4
Context (Total)	9	6.8	2.2	8.0	1.5	7.1	2.1	7.9	1.6
Context (Vocabulary)	4	3.2	1.0	3.6	0.7	3.3	1.1	3.6	0.8
Context (Sentences)	4	3.2	1.1	3.7	0.7	3.4	1.0	3.7	0.8
Sentence Questions	8	5.9	2.4	7.0	1.6	5.8	2.5	7.1	1.7
Reading for Meaning Total	45	33.2	9.5	38.4	6.5	33.2	8.8	38.0	6.9
Grand Total	115	87.2	20.4	99.7	14.7	88.2	19.7	98.1	15.9
Attitude:									
Attitude to School	9	7.6	1.8	7.5	1.8	7.2	2.0	7.4	2.0
Reading Preference	4	1.9	1.0	1.9	1.0	2.0	1.0	1.8	1.0
Math Preference	4	1.5	1.2	1.8	1.3	1.4	1.2	1.7	1.2
Social Studies Preference	4	1.5	1.1	1.3	1.2	1.6	1.1	1.5	1.2
Art Preference	4	3.5	1.0	3.3	1.1	3.4	1.1	3.3	1.2
Spelling Preference	4	1.6	1.0	1.7	1.0	1.6	1.0	1.8	1.1
Left-right Orientation	2	2.0	0.0	2.0	0.0	1.9	0.4	2.0	0.0
Scrambled Sentences	4	2.5	1.5	3.5	0.9	2.7	1.3	3.3	1.1
Individual Test Total	36	25.5	8.0	29.6	4.6	22.8	9.3	27.9	7.2
Metropolitan Achievement (raw scores)	---	(40 items) 23.9	10.3	(50 items) 26.2	10.7	(40 items) 24.2	9.2	(50 items) 24.7	10.7

Table I-71

Percentage of Follow-up Children Scoring at or Below Designated Norms[1] on the Metropolitan, Separately by Site and Grade

	FIRST-SECOND GRADE STUDY							
	FIRST GRADE[2] 50th Percentile				SECOND GRADE 50th Percentile			
	Pretest, Year 1		Posttest, Year 1		Pretest, Year 2		Posttest, Year 2	
	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown
EE	66.7	52.0	53.0	37.3	50.0	46.1	50.0	35.3
EC	51.5	53.4	50.0	34.1	56.1	39.8	51.5	34.1
CE	55.2	87.4	46.3	79.3	47.8	89.7	50.7	74.7
CC	45.3	64.6	48.0	60.8	60.0	64.6	50.7	50.6

	SECOND-THIRD GRADE STUDY							
	SECOND GRADE 50th Percentile				THIRD GRADE 25th Percentile			
	Pretest, Year 1		Posttest, Year 1		Pretest, Year 2		Posttest, Year 2	
	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown	Fresno	Youngstown
EE	74.5	56.2	52.0	43.8	32.4	21.5	35.3	16.0
EC	53.6	65.9	51.8	51.6	28.6	30.2	30.4	22.5
CE	71.6	66.2	67.6	55.6	41.9	34.8	36.5	29.8
CC	74.5	72.0	73.5	64.0	54.1	36.0	43.9	31.8

[1] Designated norms for first-second grade are the 50th percentile.

Designated norms for second-third grade are the 50th percentile at Pretest, Year 1, Posttest, Year 1 and the 25th percentile at Pretest, Year 2, Posttest, Year 2.

[2] For comparative purposes, the 50th percentile was designated the cut-off point for first grade at Pretest and Posttest, Year 1.

Ns--First-Second Grade Study

	Fresno	Youngstown
EE	66	102
EC	66	88
CE	67	87
CC	75	79

Ns--Second-Third Grade Study

	Fresno	Youngstown
EE	102	219
EC	56	182
CE	74	198
CC	98	214

TABLE I-72

Metropolitan Pretest and Posttest Scores and Grand Total Pretest and Posttest Scores for First-Second Grade Follow-up Classes in Fresno and Youngstown by Decile Divisions

		Grades 1-2									
		FRESNO					YOUNGSTOWN				
		EE		CC			EE		CC		
Decile	Score	M	SD	M	SD	p	M	SD	M	SD	p
1.	N	10		2			6		10		
	Metropolitan Pretest Yr 1	9.7	4.0	9.5	2.1	.474 (NS)	11.2	1.7	11.2	1.7	.485 (NS)
	Metropolitan Posttest Yr 1	17.9	4.4	17.5	14.8	.468 (NS)	18.0	9.4	13.4	4.2	.098 (*)
	Metropolitan Pretest Yr 2	21.1	7.5	18.0	12.7	.317 (NS)	18.3	10.0	15.4	7.3	.255 (NS)
	Metropolitan Posttest Yr 2	19.3	8.7	17.5	14.8	.406 (NS)	24.2	12.6	18.9	8.7	.169 (NS)
	Total Pretest Yr 1	13.6	2.5	14.0	1.4	.416 (NS)	12.8	2.5	12.8	1.7	.487 (NS)
	Total Posttest Yr 1	61.5	17.3	42.5	29.0	.111 (NS)	57.0	23.2	49.3	11.7	.194 (NS)
	Total Pretest Yr 2	66.8	22.4	58.0	19.8	.309 (NS)	59.8	27.1	51.0	14.8	.204 (NS)
	Total Posttest Yr 2	84.5	24.5	70.0	42.4	.250 (NS)	84.0	26.9	78.9	19.2	.332 (NS)
2.	N	9		7			4		11		
	Metropolitan Pretest Yr 1	15.7	1.4	15.3	1.3	.292 (NS)	15.5	1.0	15.1	0.8	.218 (NS)
	Metropolitan Posttest Yr 1	22.8	5.0	12.9	5.9	.001 (***)	20.5	4.7	16.6	4.7	.090 (*)
	Metropolitan Pretest Yr 2	28.0	5.4	12.4	4.4	.000 (***)	24.0	6.3	17.9	7.2	.080 (*)
	Metropolitan Posttest Yr 2	27.3	7.8	13.0	4.8	.000 (***)	25.5	7.4	20.1	9.1	.153 (NS)
	Total Pretest Yr 1	13.9	2.5	12.6	3.5	.196 (NS)	14.5	3.4	13.0	3.2	.223 (NS)
	Total Posttest Yr 1	75.3	13.4	45.7	13.2	.000 (***)	65.5	9.6	51.5	14.2	.046 (**)
	Total Pretest Yr 2	82.7	14.9	47.4	17.4	.000 (***)	75.5	18.5	57.9	19.2	.069 (*)
	Total Posttest Yr 2	101.1	7.4	58.3	18.8	.000 (***)	98.3	13.0	80.8	20.3	.068 (*)
3.	N	6		8			15		5		
	Metropolitan Pretest Yr 1	19.3	0.8	19.0	0.8	.222 (NS)	17.4	0.5	17.4	0.5	.500 (NS)
	Metropolitan Posttest Yr 1	20.2	9.0	16.9	4.8	.195 (NS)	16.9	4.1	18.2	3.9	.265 (NS)
	Metropolitan Pretest Yr 2	24.5	7.4	17.0	4.9	.020 (**)	18.5	4.7	21.0	6.2	.178 (NS)
	Metropolitan Posttest Yr 2	20.3	10.6	16.1	4.9	.168 (NS)	18.1	6.1	22.6	6.8	.093 (†)
	Total Pretest Yr 1	15.3	2.3	14.4	3.4	.282 (NS)	12.7	3.6	13.0	4.4	.433 (NS)
	Total Posttest Yr 1	66.7	23.8	54.3	16.9	.137 (NS)	49.5	12.4	56.6	9.1	.130 (NS)
	Total Pretest Yr 2	69.3	21.9	46.4	10.6	.011 (**)	53.8	16.9	59.6	18.4	.262 (NS)
	Total Posttest Yr 2	82.8	24.0	69.0	15.5	.107 (NS)	77.3	16.1	91.4	18.6	.060 (*)
4.	N	6		3			8		5		
	Metropolitan Pretest Yr 1	21.7	0.5	21.7	0.6	.500 (NS)	19.6	0.5	19.8	0.4	.273 (NS)
	Metropolitan Posttest Yr 1	20.5	3.1	24.0	8.7	.193 (NS)	19.6	9.3	21.8	6.7	.329 (NS)
	Metropolitan Pretest Yr 2	20.2	5.4	24.0	8.7	.215 (NS)	23.6	6.5	22.6	5.9	.390 (NS)
	Metropolitan Posttest Yr 2	23.2	8.3	25.3	11.8	.377 (NS)	22.5	8.7	26.8	8.2	.197 (NS)
	Total Pretest Yr 1	15.5	4.1	17.3	2.1	.251 (NS)	14.8	3.7	16.2	2.6	.229 (NS)
	Total Posttest Yr 1	65.3	17.0	74.7	31.8	.286 (NS)	66.5	18.1	64.0	19.0	.408 (NS)
	Total Pretest Yr 2	67.3	17.6	75.3	31.6	.315 (NS)	62.6	16.0	68.8	20.5	.277 (NS)
	Total Posttest Yr 2	86.5	25.5	90.0	21.7	.423 (NS)	89.9	17.1	95.6	14.6	.274 (NS)
5.	N	8		6			12		14		
	Metropolitan Pretest Yr 1	23.4	0.5	23.7	0.5	.158 (NS)	22.0	0.7	21.6	0.6	.098 (*)
	Metropolitan Posttest Yr 1	24.1	8.4	19.0	9.0	.146 (NS)	20.9	9.2	21.3	5.4	.450 (NS)
	Metropolitan Pretest Yr 2	27.3	9.1	22.2	7.8	.147 (NS)	22.1	9.6	23.6	7.5	.323 (NS)
	Metropolitan Posttest Yr 2	23.6	11.7	22.5	10.1	.426 (NS)	23.9	10.6	28.1	8.1	.134 (NS)
	Total Pretest Yr 1	15.4	2.7	16.0	2.8	.340 (NS)	16.0	4.0	15.9	2.7	.478 (NS)
	Total Posttest Yr 1	78.1	22.7	58.8	24.4	.076 (*)	66.8	21.1	66.9	18.3	.495 (NS)
	Total Pretest Yr 2	82.6	27.1	62.5	26.6	.095 (*)	70.5	23.4	74.5	21.5	.327 (NS)
	Total Posttest Yr 2	95.8	22.7	90.8	8.9	.313 (NS)	90.2	21.0	94.0	18.4	.312 (NS)

p values indicate that scores between EE and CC groups are significantly different:

* = significant at the .10 level
** = significant at the .05 level
*** = significant at the .01 level
NS = not significant

† = significant at the .10 level but in favor of the control group
†† = significant at the .05 level but in favor of the control group
††† = significant at the .01 level but in favor of the control group

TABLE I-72

Metropolitan Pretest and Posttest Scores and Grand Total Pretest and Posttest Scores for First-Second Grade Follow-up Classes in Fresno and Youngstown by Decile Divisions

Decile	Score	Grades 1-2									
		FRESNO					YOUNGSTOWN				
		EE		CC			EE		CC		
		M	SD	M	SD	p	M	SD	M	SD	p
6.	N	5		8			8		6		
	Metropolitan Pretest Yr 1	25.4	0.5	25.5	0.5	.375 (NS)	25.0	0.8	24.8	0.4	.318 (NS)
	Metropolitan Posttest Yr 1	21.8	6.4	24.9	5.6	.190 (NS)	25.8	4.7	25.2	8.8	.437 (NS)
	Metropolitan Pretest Yr 2	21.8	10.7	26.8	5.9	.150 (NS)	29.6	2.9	27.0	6.4	.158 (NS)
	Metropolitan Posttest Yr 2	21.2	12.8	25.4	7.6	.235 (NS)	32.5	4.2	29.0	7.9	.151 (NS)
	Total Pretest Yr 1	18.0	2.0	17.4	2.6	.329 (NS)	16.4	3.0	16.3	3.1	.490 (NS)
	Total Posttest Yr 1	63.6	24.2	71.8	17.3	.394 (NS)	84.0	6.9	68.2	20.2	.029 (**)
	Total Pretest Yr 2	75.2	21.4	81.0	18.3	.306 (NS)	89.1	4.2	75.7	23.1	.064 (*)
	Total Posttest Yr 2	86.6	23.5	95.5	14.5	.206 (NS)	105.9	3.6	101.8	7.3	.097 (*)
7.	N	5		7			8		11		
	Metropolitan Pretest Yr 1	27.4	0.5	27.4	0.5	.465 (NS)	27.8	0.9	27.8	0.9	.434 (NS)
	Metropolitan Posttest Yr 1	28.0	4.9	17.9	4.9	.003 (***)	30.0	2.6	23.0	5.3	.001 (***)
	Metropolitan Pretest Yr 2	29.0	5.2	18.9	4.6	.002 (***)	29.4	3.6	25.3	7.3	.080 (*)
	Metropolitan Posttest Yr 2	33.6	4.8	21.9	5.4	.001 (***)	31.3	6.8	24.3	8.2	.033 (**)
	Total Pretest Yr 1	17.8	1.8	17.7	1.4	.463 (NS)	17.3	1.5	18.3	1.4	.073 (†)
	Total Posttest Yr 1	82.2	11.4	56.0	10.9	.001 (***)	89.4	14.2	65.8	15.8	.002 (***)
	Total Pretest Yr 2	92.2	15.7	63.0	11.8	.002 (***)	88.3	18.5	72.4	13.6	.022 (**)
	Total Posttest Yr 2	103.8	3.7	86.9	12.2	.007 (***)	102.6	16.2	94.8	11.8	.120 (NS)
8.	N	6		10			17		4		
	Metropolitan Pretest Yr 1	29.3	0.5	29.4	0.5	.403 (NS)	30.9	0.8	31.3	0.5	.192 (NS)
	Metropolitan Posttest Yr 1	25.5	7.8	25.3	6.0	.477 (NS)	31.2	3.7	25.8	5.5	.013 (***)
	Metropolitan Pretest Yr 2	26.2	8.6	28.6	4.2	.227 (NS)	30.0	6.3	28.8	5.6	.361 (NS)
	Metropolitan Posttest Yr 2	25.3	11.4	28.9	7.4	.229 (NS)	33.1	4.9	31.8	2.4	.299 (NS)
	Total Pretest Yr 1	18.5	1.8	19.3	1.6	.186 (NS)	18.9	1.8	18.0	1.2	.183 (NS)
	Total Posttest Yr 1	73.0	25.5	70.9	15.2	.419 (NS)	91.7	12.6	80.0	5.0	.044 (**)
	Total Pretest Yr 2	75.3	28.0	83.7	10.6	.201 (NS)	94.4	13.8	85.8	8.8	.126 (NS)
	Total Posttest Yr 2	92.2	18.2	101.2	7.0	.087 (*)	106.5	6.6	105.5	4.7	.392 (NS)
9.	N	7		13			10		4		
	Metropolitan Pretest Yr 1	31.4	0.5	32.4	0.9	.008 (†††)	33.0	0.0	33.0	0.0	.500 (NS)
	Metropolitan Posttest Yr 1	31.3	4.2	29.9	4.8	.266 (NS)	32.3	4.4	25.8	3.9	.012 (***)
	Metropolitan Pretest Yr 2	32.4	2.5	29.7	5.5	.114 (NS)	31.7	3.9	27.8	5.2	.073 (*)
	Metropolitan Posttest Yr 2	32.3	6.3	33.9	6.3	.293 (NS)	34.3	5.7	27.0	7.9	.037 (**)
	Total Pretest Yr 1	18.3	2.0	19.3	2.0	.142 (NS)	21.2	1.4	18.3	1.0	.001 (***)
	Total Posttest Yr 1	95.7	14.5	86.9	17.6	.137 (NS)	98.6	15.3	74.8	16.1	.011 (***)
	Total Pretest Yr 2	100.4	12.2	93.6	16.3	.174 (NS)	98.5	16.2	81.0	24.6	.069 (*)
	Total Posttest Yr 2	106.9	5.9	105.6	7.3	.351 (NS)	107.7	11.3	97.0	11.2	.067 (*)
10.	N	4		11			14		9		
	Metropolitan Pretest Yr 1	35.8	1.5	35.4	1.3	.314 (NS)	36.1	1.5	34.6	0.7	.004 (***)
	Metropolitan Posttest Yr 1	34.3	1.0	28.9	5.1	.032 (**)	33.4	2.6	31.2	4.1	.072 (*)
	Metropolitan Pretest Yr 2	33.8	0.5	30.5	3.7	.057 (*)	33.6	0.6	32.2	3.2	.060 (*)
	Metropolitan Posttest Yr 2	38.0	0.8	34.5	4.2	.067 (*)	36.9	2.0	34.7	4.4	.054 (**)
	Total Pretest Yr 1	20.0	1.2	19.7	1.2	.349 (NS)	20.9	1.8	19.9	2.0	.121 (NS)
	Total Posttest Yr 1	101.5	6.0	89.3	16.2	.085 (*)	107.6	7.5	94.1	10.0	.000 (***)
	Total Pretest Yr 2	106.8	7.6	94.3	14.2	.062 (*)	107.6	6.2	102.2	10.5	.068 (*)
	Total Posttest Yr 2	111.3	2.6	107.0	5.9	.096 (*)	112.1	2.9	110.1	3.6	.079 (*)

p values indicate that scores between EE and CC groups are significantly different:

* = significant at the .10 level
** = significant at the .05 level
*** = significant at the .01 level
NS = not significant

† = significant at the .10 level but in favor of the control group
†† = significant at the .05 level but in favor of the control group
††† = significant at the .01 level but in favor of the control group

TABLE I-73

Metropolitan Pretest and Posttest Scores and Grand Total Pretest and Posttest Scores for Second-Third Grade Follow-up Classes in Fresno and Youngstown by Decile Divisions

		Grades 2-3									
		FRESNO					YOUNGSTOWN				
		EE		CC			EE		CC		
Decile	Score	M	SD	M	SD	p	M	SD	M	SD	p
1.	N	6		14			12		24		
	Metropolitan Pretest Yr 1	8.5	2.4	9.3	2.0	.228 (NS)	11.2	2.6	11.9	2.0	.183 (NS)
	Metropolitan Posttest Yr 1	12.3	4.5	13.8	6.3	.310 (NS)	16.5	4.9	14.9	6.7	.177 (NS)
	Metropolitan Pretest Yr 2	12.8	4.5	15.4	4.3	.120 (NS)	17.2	5.7	16.9	5.7	.443 (NS)
	Metropolitan Posttest Yr 2	15.3	3.7	15.7	6.3	.446 (NS)	16.7	6.0	17.3	5.9	.383 (NS)
	Total Pretest Yr 1	43.7	6.6	36.8	7.5	.034 (**)	41.6	7.9	44.9	9.5	.151 (NS)
	Total Posttest Yr 1	66.0	16.1	65.6	17.6	.480 (NS)	70.1	13.7	70.1	14.9	.500 (NS)
	Total Pretest Yr 2	62.3	10.9	66.5	19.6	.316 (NS)	71.8	16.2	74.8	15.9	.305 (NS)
	Total Posttest Yr 2	77.8	15.6	83.6	17.8	.249 (NS)	89.3	19.8	90.8	13.5	.392 (NS)
2.	N	5		11			15		30		
	Metropolitan Pretest Yr 1	13.8	1.3	14.0	1.0	.370 (NS)	16.1	0.8	16.3	0.8	.266 (NS)
	Metropolitan Posttest Yr 1	13.6	5.9	9.7	4.2	.075 (*)	17.3	5.9	18.7	4.8	.188 (NS)
	Metropolitan Pretest Yr 2	17.6	3.8	13.0	5.1	.048 (**)	20.9	7.0	18.8	6.7	.169 (NS)
	Metropolitan Posttest Yr 2	16.0	2.0	13.4	4.3	.108 (NS)	20.3	6.8	17.6	6.7	.112 (NS)
	Total Pretest Yr 1	40.4	6.3	43.5	13.4	.319 (NS)	52.4	8.2	51.3	8.4	.339 (NS)
	Total Posttest Yr 1	70.8	16.1	58.6	15.2	.083 (*)	82.1	12.6	78.1	14.1	.181 (NS)
	Total Pretest Yr 2	75.8	14.8	64.2	15.9	.094 (*)	85.1	10.1	82.6	14.2	.273 (NS)
	Total Posttest Yr 2	91.6	9.6	77.7	17.8	.064 (*)	98.7	8.5	93.4	13.7	.088 (*)
3.	N	5		4			18		18		
	Metropolitan Pretest Yr 1	16.0	0.0	16.0	0.0	.500 (NS)	19.1	0.7	19.4	0.8	.066 (†)
	Metropolitan Posttest Yr 1	14.0	1.9	14.8	1.5	.268 (NS)	20.6	6.6	20.5	4.1	.488 (NS)
	Metropolitan Pretest Yr 2	20.6	8.8	10.3	2.2	.028 (**)	20.6	7.0	20.9	6.5	.432 (NS)
	Metropolitan Posttest Yr 2	19.0	6.4	13.8	5.0	.110 (NS)	22.6	6.6	19.7	6.9	.109 (NS)
	Total Pretest Yr 1	47.0	9.8	50.5	10.8	.313 (NS)	53.9	9.9	57.7	9.7	.127 (NS)
	Total Posttest Yr 1	80.4	12.7	52.0	2.8	.001 (***)	86.4	12.7	83.6	14.3	.266 (NS)
	Total Pretest Yr 2	87.0	12.2	60.0	4.5	.002 (***)	88.9	12.1	84.6	18.1	.199 (NS)
	Total Posttest Yr 2	97.6	7.5	77.0	13.6	.011 (**)	100.5	7.9	96.8	10.5	.122 (NS)
4.	N	15		12			16		28		
	Metropolitan Pretest Yr 1	17.7	0.8	17.5	0.5	.273 (NS)	21.4	0.5	21.7	0.5	.061 (†)
	Metropolitan Posttest Yr 1	18.3	5.8	16.2	6.6	.187 (NS)	21.9	6.0	20.4	6.3	.218 (NS)
	Metropolitan Pretest Yr 2	20.4	8.1	19.3	8.2	.368 (NS)	26.3	7.4	22.1	6.4	.027 (**)
	Metropolitan Posttest Yr 2	18.0	4.6	20.1	5.6	.150 (NS)	27.5	8.3	21.5	8.0	.011 (**)
	Total Pretest Yr 1	50.7	5.1	49.1	8.3	.265 (NS)	65.8	9.5	60.1	9.1	.028 (**)
	Total Posttest Yr 1	85.5	10.2	77.8	14.2	.059 (*)	93.3	6.7	81.7	13.3	.001 (***)
	Total Pretest Yr 2	88.7	11.7	80.2	16.6	.064 (*)	95.7	8.0	85.3	16.4	.011 (**)
	Total Posttest Yr 2	97.0	11.8	95.6	13.6	.387 (NS)	104.6	5.4	97.6	9.6	.005 (***)
5.	N	8		12			22		31		
	Metropolitan Pretest Yr 1	20.6	0.5	20.4	0.5	.194 (NS)	23.9	0.8	23.9	0.7	.451 (NS)
	Metropolitan Posttest Yr 1	19.3	5.8	19.5	5.4	.461 (NS)	24.1	7.2	23.3	6.0	.328 (NS)
	Metropolitan Pretest Yr 2	20.5	4.2	21.6	6.3	.338 (NS)	24.7	7.5	25.4	6.3	.365 (NS)
	Metropolitan Posttest Yr 2	14.9	2.7	22.2	10.8	.040 (††)	24.2	10.7	24.0	8.3	.465 (NS)
	Total Pretest Yr 1	53.6	8.6	56.8	8.7	.220 (NS)	67.0	11.5	65.8	10.0	.342 (NS)
	Total Posttest Yr 1	88.4	7.0	80.8	12.3	.067 (*)	94.4	10.8	90.0	10.8	.076 (*)
	Total Pretest Yr 2	91.1	5.4	86.3	12.3	.155 (NS)	96.1	9.4	91.3	13.1	.073 (*)
	Total Posttest Yr 2	100.8	5.3	97.9	11.1	.256 (NS)	103.0	7.4	101.5	7.4	.244 (NS)

p values indicate that scores between EE and CC groups are significantly different:

* = significant at the .10 level
** = significant at the .05 level
*** = significant at the .01 level
NS = not significant

† = significant at the .10 level but in favor of the control group
†† = significant at the .05 level but in favor of the control group
††† = significant at the .01 level but in favor of the control group

TABLE I-73

Metropolitan Pretest and Posttest Scores and Grand Total Pretest and Posttest Scores for Second-Third Grade Follow-up Classes in Fresno and Youngstown by Decile Divisions

Decile	Score	Grades 2-3									
		FRESNO					YOUNGSTOWN				
		EE		CC			EE		CC		
		M	SD	M	SD	p	M	SD	M	SD	p
6.	N	14		13			21		17		
	Metropolitan Pretest Yr 1	22.7	0.8	23.1	0.9	.137 (NS)	26.4	0.5	26.5	0.5	.274 (NS)
	Metropolitan Posttest Yr 1	24.5	8.4	19.8	4.3	.040 (**)	27.1	5.7	25.7	5.2	.213 (NS)
	Metropolitan Pretest Yr 2	28.6	8.3	23.3	7.2	.044 (**)	29.1	4.6	27.1	5.7	.122 (NS)
	Metropolitan Posttest Yr 2	24.9	10.3	20.5	5.6	.042 (**)	28.6	8.6	26.8	8.4	.260 (NS)
	Total Pretest Yr 1	59.7	9.3	61.7	13.5	.329 (NS)	76.5	8.1	71.5	6.4	.021 (**)
	Total Posttest Yr 1	97.9	13.2	84.2	12.7	.005 (***)	99.8	7.5	93.6	9.0	.013 (**)
	Total Pretest Yr 2	98.6	11.9	91.8	10.8	.066 (*)	101.5	6.8	95.7	7.5	.009 (***)
	Total Posttest Yr 2	105.0	7.6	102.1	6.3	.144 (NS)	106.7	5.8	103.7	5.1	.054 (*)
7.	N	13		6			31		9		
	Metropolitan Pretest Yr 1	25.5	0.5	25.7	0.5	.217 (NS)	28.4	0.5	28.3	0.5	.388 (NS)
	Metropolitan Posttest Yr 1	27.8	5.3	24.3	7.2	.122 (NS)	30.2	5.4	24.9	4.6	.005 (***)
	Metropolitan Pretest Yr 2	32.8	4.4	28.3	7.9	.065 (*)	31.8	5.2	27.6	3.5	.013 (**)
	Metropolitan Posttest Yr 2	27.5	8.0	27.3	12.1	.482 (NS)	33.0	8.3	29.3	5.9	.115 (NS)
	Total Pretest Yr 1	67.2	8.8	66.7	9.2	.450 (NS)	78.7	8.1	70.9	3.7	.004 (***)
	Total Posttest Yr 1	103.8	4.7	93.0	9.8	.002 (***)	102.5	8.0	95.6	3.9	.008 (***)
	Total Pretest Yr 2	104.9	3.2	95.2	10.3	.002 (***)	103.8	7.8	98.8	5.6	.039 (**)
	Total Posttest Yr 2	108.8	2.2	99.0	10.9	.002 (***)	109.2	4.7	104.9	4.4	.009 (***)
8.	N	16		6			14		14		
	Metropolitan Pretest Yr 1	28.2	1.2	29.3	0.8	.020 (††)	30.4	0.5	30.6	0.5	.234 (NS)
	Metropolitan Posttest Yr 1	33.0	4.4	25.8	8.4	.008 (***)	30.6	3.9	30.3	5.2	.419 (NS)
	Metropolitan Pretest Yr 2	33.1	5.9	36.0	2.4	.128 (NS)	31.5	5.6	31.4	4.7	.471 (NS)
	Metropolitan Posttest Yr 2	31.0	6.0	32.8	2.7	.241 (NS)	31.6	9.0	35.6	5.2	.081 (†)
	Total Pretest Yr 1	71.1	9.9	81.0	3.3	.014 (†††)	83.4	8.7	84.2	7.3	.399 (NS)
	Total Posttest Yr 1	105.0	5.4	100.8	5.5	.063 (*)	101.8	6.8	103.4	5.2	.249 (NS)
	Total Pretest Yr 2	105.3	5.5	104.3	3.6	.347 (NS)	103.6	5.3	103.0	4.1	.377 (NS)
	Total Posttest Yr 2	108.7	3.2	106.5	4.4	.106 (NS)	109.1	3.9	109.1	2.7	.477 (NS)
9.	N	10		4			28		21		
	Metropolitan Pretest Yr 1	31.6	0.5	31.5	0.6	.378 (NS)	32.4	0.5	32.4	0.5	.403 (NS)
	Metropolitan Posttest Yr 1	34.0	2.5	27.3	5.1	.002 (***)	33.6	3.8	34.0	4.3	.368 (NS)
	Metropolitan Pretest Yr 2	35.7	3.4	33.3	3.4	.123 (NS)	35.3	3.5	34.1	4.9	.179 (NS)
	Metropolitan Posttest Yr 2	36.0	6.6	30.8	7.9	.112 (NS)	39.4	6.5	38.4	6.7	.298 (NS)
	Total Pretest Yr 1	83.9	11.3	85.8	2.9	.379 (NS)	92.6	8.1	90.9	8.0	.222 (NS)
	Total Posttest Yr 1	107.2	4.5	102.3	4.6	.043 (**)	108.9	3.9	106.4	4.7	.024 (**)
	Total Pretest Yr 2	108.9	4.3	105.8	3.7	.111 (NS)	109.5	3.5	107.3	4.0	.021 (**)
	Total Posttest Yr 2	111.5	1.7	108.8	2.5	.017 (**)	111.8	2.5	110.4	3.3	.053 (*)
10.	N	10		16			42		22		
	Metropolitan Pretest Yr 1	33.7	0.8	34.1	0.7	.089 (†)	34.5	0.5	34.5	0.5	.243 (NS)
	Metropolitan Posttest Yr 1	35.3	3.9	34.3	5.4	.310 (NS)	36.0	3.0	35.2	3.6	.177 (NS)
	Metropolitan Pretest Yr 2	36.5	2.6	36.5	2.3	.500 (NS)	36.5	3.7	35.1	3.9	.085 (*)
	Metropolitan Posttest Yr 2	35.9	6.6	36.1	10.1	.475 (NS)	41.2	4.4	40.7	5.8	.361 (NS)
	Total Pretest Yr 1	89.6	15.4	97.8	9.6	.054 (††)	99.1	7.6	100.0	8.2	.331 (NS)
	Total Posttest Yr 1	109.1	4.3	107.8	5.5	.259 (NS)	110.0	3.3	108.7	5.4	.118 (NS)
	Total Pretest Yr 2	108.4	4.6	108.5	4.7	.479 (NS)	110.6	3.7	109.7	4.0	.172 (NS)
	Total Posttest Yr 2	111.0	3.0	106.3	20.8	.244 (NS)	112.4	2.2	111.7	3.8	.202 (NS)

p values indicate that scores between EE and CC groups are significantly different:

* = significant at the .10 level

** = significant at the .05 level

*** = significant at the .01 level

NS = not significant

† = significant at the .10 level but in favor of the control group

†† = significant at the .05 level but in favor of the control group

††† = significant at the .01 level but in favor of the control group

Table I-74

Percentile Rankings on the Cooperative Reading Test (Fresno) and Scott Foresman Basic Reading Test (Youngstown) for Second and Third Grade Follow-up Children (in the second year of the study)

	FRESNO				YOUNGSTOWN			
	EE		CC		EE		CC	
	M	SD	M	SD	M	SD	M	SD
Grade 2	(N=66)		(N=70)		(N=102)		(N=77)	
(Ist-2nd grade)	45.3	23.8	55.5	27.8	53.1	32.1	38.6	27.1
Grade 3	(N=92)		(N=93)		(N=210)		(N=213)	
(2nd-3rd grade)	40.8	24.8	37.9	28.2	45.2	31.0	30.1	24.7

TABLE I-75

Pretest and Posttest Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Fresno, Grade 2 (in the second year of the first-second grade study)

		Experimental N=12				Control N=13			
		Pretest		Posttest		Pretest		Posttest	
Scales and Items	Maximum Possible Score	M	SD	M	SD	M	SD	M	SD
Time spent in classroom activities (minutes per week):									
% Miscellaneous	---	4.3	3.0	4.1	1.3	5.0	8.1	3.9	2.8
% Science	---	5.9	3.0	6.0	4.5	5.0	3.4	7.4	2.8
% Arithmetic	---	21.4	6.7	15.0	4.0	17.9	6.5	16.1	3.6
% Social Studies	---	6.6	2.2	3.9	3.1	7.8	3.2	6.8	2.9
% Physical Education	---	9.1	4.5	8.1	2.4	8.6	4.4	9.2	3.2
% Language	---	12.3	6.5	12.6	7.2	11.3	3.7	11.8	5.8
% Reading	---	38.2	9.1	46.3	12.1	40.9	11.3	42.2	10.8
% Other	---	2.3	3.8	4.0	5.2	3.5	5.0	2.6	3.8
Time spent in reading activities (minutes per week):									
% Blending	---	12.9	10.0	9.8	6.3	11.4	7.4	15.6	16.5
% Letter Groups	---	8.1	7.7	10.6	5.8	12.3	7.2	10.5	3.7
% Sight Words	---	18.4	13.1	11.0	5.7	10.0	5.9	9.2	4.4
% Spelling Patterns	---	8.6	6.8	10.0	4.1	9.1	4.9	12.2	4.2
% Morphemes	---	3.8	2.6	7.4	4.1	6.4	3.9	6.8	4.1
% Syntax	---	3.8	2.8	8.4	5.8	5.0	4.5	4.2	3.8
% Punctuation	---	7.8	5.9	9.9	5.8	6.4	2.3	6.7	3.8
% Context Clues	---	6.9	3.4	8.8	2.5	10.9	6.6	11.3	5.5
% Comprehension	---	26.7	20.1	20.8	14.6	27.3	17.9	23.5	11.8
% Other	---	3.0	7.9	3.3	9.4	1.4	4.5	0.0	0.0
Attitude to Educational TV	5	3.7	0.8	3.7	0.6	4.2	0.6	4.1	0.7
Attitude to Phonics	5	4.1	0.8	4.2	0.8	4.8	0.3	4.9	0.2
Attitude to Linguistics	5	3.6	1.1	3.7	0.7	3.8	0.9	4.0	0.5
Attitude to *Sesame Street*	5	3.1	1.3	---	---	3.5	0.8	---	---
Attitude to *The Electric Company*	5	2.6	1.3	---	---	3.5	0.8	---	---
Attitude to Reading Performance	4	3.2	0.7	3.0	0.7	3.0	0.9	3.1	0.6
Job Satisfaction	1								
Hours per week spent watching TV	---	0.8	0.1	---	---	0.8	0.2	---	---
Number of children in class	---	25.6	3.2	24.3	5.5	25.5	4.9	26.0	2.9
Number in class needing remedial help	---	10.7	7.4	8.1	7.4	10.3	7.6	7.8	5.2
Years of education completed	---	16.8	0.9	---	---	17.6	1.9	---	---
Years of teaching experience	---	11.1	11.5	---	---	14.8	9.3	---	---
FOR EXPERIMENTAL CLASSES ONLY:									
The Electric Company Viewing Index	4.75	---	---	4.3	0.7	---	---	---	---
Usefulness with reading difficulties	4	---	---	2.5	0.8	---	---	---	---
Usefulness in teaching reading skills	4	---	---	2.6	0.7	---	---	---	---
Appropriateness for the class	4	---	---	3.0	0.8	---	---	---	---
Time taken from other subject areas in order to watch *The Electric Company*:									
Regular reading		---	---	4.2	8.7	---	---	---	---
Language arts		---	---	15.0	16.1	---	---	---	---
Other academic subjects		---	---	43.8	16.3	---	---	---	---
Physical education		---	---	5.4	6.2	---	---	---	---
Lunch		---	---	1.3	4.3	---	---	---	---
Art or Music		---	---	28.8	13.0	---	---	---	---
Other		---	---	1.7	5.8	---	---	---	---

TABLE I-76

Pretest and Posttest Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Fresno, Grade 3 (in the second year of the second-third grade study)

Scales and Items	Maximum Possible Score	Experimental N=15				Control N=16			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Time spent in classroom activities (minutes per week):									
% Miscellaneous	---	4.7	2.2	3.2	2.4	3.7	3.0	3.3	2.5
% Science	---	7.8	3.4	6.2	3.6	5.0	2.9	7.2	4.0
% Arithmetic	---	20.0	3.7	20.6	4.9	20.2	4.1	18.2	4.0
% Social Studies	---	8.8	5.6	6.3	4.5	7.7	3.9	8.9	4.5
% Physical Education	---	7.5	3.8	8.9	3.8	8.6	3.3	9.9	3.0
% Language	---	17.5	6.2	12.0	6.2	11.4	6.2	14.0	6.0
% Reading	---	30.4	10.1	38.8	12.1	42.0	10.8	35.3	11.6
% Other	---	3.4	4.7	3.9	5.6	1.4	2.2	3.3	3.8
Time spent in reading activities (minutes per week):									
% Blending	---	11.6	9.4	7.9	4.6	9.8	7.2	6.6	4.7
% Letter Groups	---	10.3	4.8	10.9	6.1	8.6	4.2	7.6	3.4
% Sight Words	---	12.5	6.8	12.5	7.3	9.9	4.7	8.5	5.1
% Spelling Patterns	---	11.5	3.9	9.9	5.3	11.0	5.2	10.3	5.6
% Morphemes	---	7.8	4.5	8.4	3.3	5.9	3.8	8.5	3.8
% Syntax	---	6.4	4.5	6.6	3.9	6.4	4.0	5.6	3.4
% Punctuation	---	6.8	2.9	7.2	3.3	7.1	4.0	7.1	3.8
% Context Clues	---	8.8	5.2	8.2	4.2	11.8	5.6	14.7	8.7
% Comprehension	---	23.4	7.2	27.5	15.0	25.7	18.8	27.7	17.9
% Other	---	0.9	3.0	0.7	2.7	3.9	8.6	3.3	7.0
Attitude to Educational TV	5	3.7	1.0	3.8	0.7	3.4	1.1	3.3	0.9
Attitude to Phonics	5	4.1	0.8	4.1	0.8	4.4	0.6	4.4	0.7
Attitude to Linguistics	5	4.1	0.9	3.6	0.9	4.2	0.7	3.7	0.7
Attitude to *Sesame Street*	5	3.4	0.9	---	---	3.1	1.1	---	---
Attitude to *The Electric Company*	5	3.1	0.8	---	---	2.9	1.5	---	---
Attitude to Reading Performance	4	3.2	0.7	3.1	0.8	2.9	0.8	3.0	0.8
Job Satisfaction	1	0.8	0.2	---	---	0.8	0.2	---	---
Hours per week spent watching TV	---	---	---	2.6	1.1	---	---	1.0	1.2
Number of children in class	---	28.2	2.5	28.1	2.3	27.9	2.8	26.8	5.0
Number in class needing remedial help	---	10.7	7.1	10.8	8.3	11.7	7.4	8.8	8.2
Years of education completed	---	17.1	1.0	---	---	17.4	1.5	---	---
Years of teaching experience	---	9.5	7.6	---	---	16.3	9.5	---	---
FOR EXPERIMENTAL CLASSES ONLY:									
The Electric Company Viewing Index	4.75	---	---	4.6	0.3	---	---	---	---
Usefulness with reading difficulties	4	---	---	2.8	0.9	---	---	---	---
Usefulness in teaching reading skills	4	---	---	2.7	1.0	---	---	---	---
Appropriateness for the class	4	---	---	3.1	0.8	---	---	---	---
Time taken from other subject areas in order to watch *The Electric Company*:									
Regular reading		---	---	9.3	15.9	---	---	---	---
Language arts		---	---	23.3	16.7	---	---	---	---
Other academic subjects		---	---	42.3	19.4	---	---	---	---
Physical education		---	---	4.3	7.3	---	---	---	---
Lunch		---	---	4.7	12.9	---	---	---	---
Art or Music		---	---	16.0	14.7	---	---	---	---
Other		---	---	0.0	0.0	---	---	---	---

TABLE I-77

Pretest and Posttest Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Youngstown, Grade 2 (in the second year of the first-second grade study)

Scales and Items	Maximum Possible Score	Experimental N=13				Control N=11			
		Pretest		Posttest		Pretest		Posttest	
		M	SD	M	SD	M	SD	M	SD
Time spent in classroom activities (minutes per week):									
% Miscellaneous	---	9.8	7.5	4.3	1.8	7.5	6.5	4.2	1.7
% Science	---	5.4	2.4	5.7	2.8	5.7	3.1	6.1	3.2
% Arithmetic	---	15.1	6.2	16.4	6.6	13.9	4.8	15.0	7.5
% Social Studies	---	7.9	3.0	6.8	3.1	8.2	3.4	8.4	3.0
% Physical Education	---	7.0	2.8	8.0	3.0	6.6	2.5	8.3	2.5
% Language	---	15.2	6.1	13.5	2.5	17.5	6.6	13.1	3.3
% Reading	---	33.5	9.5	38.1	6.8	36.2	8.3	41.4	9.6
% Other	---	6.0	6.6	7.2	6.6	4.4	4.7	3.5	4.3
Time spent in reading activities (minutes per week):									
% Blending	---	11.2	5.5	10.8	6.4	10.7	5.0	8.5	5.7
% Letter Groups	---	6.1	3.7	8.3	5.0	7.0	3.3	8.1	5.4
% Sight Words	---	17.1	9.2	13.8	7.8	16.9	9.9	13.0	6.2
% Spelling Patterns	---	8.2	8.7	11.3	5.8	9.1	6.6	10.8	5.0
% Morphemes	---	6.3	2.7	7.8	5.4	7.0	2.4	5.2	3.2
% Syntax	---	3.3	3.5	3.2	3.0	4.8	5.6	4.4	2.9
% Punctuation	---	4.2	2.9	6.8	5.2	4.8	3.3	5.4	3.6
% Context Clues	---	9.8	4.9	9.0	5.6	9.7	3.3	9.4	3.3
% Comprehension	---	31.5	20.2	27.3	19.3	24.9	9.3	34.0	15.0
% Other	---	2.3	4.4	1.5	3.8	5.0	6.7	1.4	4.5
Attitude to Educational TV	5	4.1	0.6	4.2	0.7	3.9	0.8	3.9	0.9
Attitude to Phonics	5	4.8	0.4	4.5	0.9	4.2	0.7	4.4	0.8
Attitude to Linguistics	5	4.5	0.6	4.1	0.9	4.0	1.0	3.7	0.9
Attitude to Sesame Street	5	3.6	0.7	---	---	3.6	0.7	---	---
Attitude to The Electric Company	5	3.5	0.5	---	---	3.3	0.8	---	---
Attitude to Reading Performance	4	2.7	0.9	2.9	1.0	3.2	0.7	3.4	0.7
Job Satisfaction	1	0.7	0.2	---	---	0.8	0.1	---	---
Hours per week spent watching TV	---	---	---	3.1	2.1	---	---	0.2	0.4
Number of children in class	---	25.7	2.4	25.2	1.9	23.4	7.8	26.2	2.3
Number in class needing remedial help	---	11.8	7.0	8.4	6.5	8.5	6.0	6.5	4.6
Years of education completed	---	16.3	1.7	---	---	16.8	1.3	---	---
Years of teaching experience	---	13.0	9.8	---	---	10.3	9.5	---	---
FOR EXPERIMENTAL CLASSES ONLY:									
The Electric Company Viewing Index	4.75	---	---	4.7	0.3	---	---	---	---
Usefulness with reading difficulties	4	---	---	2.8	1.1	---	---	---	---
Usefulness in teaching reading skills	4	---	---	2.9	0.8	---	---	---	---
Appropriateness for the class	4	---	---	3.4	0.7	---	---	---	---
Time taken from other subject areas in order to watch The Electric Company:									
Regular reading		---	---	13.8	26.9	---	---	---	---
Language arts		---	---	16.6	22.7	---	---	---	---
Other academic subjects		---	---	22.8	21.8	---	---	---	---
Physical education		---	---	16.8	24.8	---	---	---	---
Lunch		---	---	9.9	27.5	---	---	---	---
Art or Music		---	---	17.4	18.3	---	---	---	---
Other		---	---	2.6	9.4	---	---	---	---

TABLE I-78

Pretest and Posttest Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Youngstown, Grade 3 (in the second year of the second-third grade study)

Scales and Items	Maximum Possible Score	Experimental N=23 Pretest M	Experimental N=23 Pretest SD	Experimental N=23 Posttest M	Experimental N=23 Posttest SD	Control N=23 Pretest M	Control N=23 Pretest SD	Control N=23 Posttest M	Control N=23 Posttest SD
Time spent in classroom activities (minutes per week):									
% Miscellaneous	---	5.0	3.6	4.8	3.4	4.7	2.9	5.[illegible]	4.1
% Science	---	8.8	3.7	7.3	4.2	9.1	3.3	7.9	3.0
% Arithmetic	---	18.5	5.3	18.4	5.2	18.6	6.8	20.8	7.3
% Social Studies	---	9.8	3.7	10.0	4.8	9.6	2.8	9.8	3.8
% Physical Education	---	6.8	4.1	6.7	3.0	5.9	2.4	6.9	2.7
% Language	---	18.3	6.3	15.3	6.1	14.9	6.7	15.4	4.7
% Reading	---	29.6	6.6	32.5	9.6	32.4	9.6	28.7	6.3
% Other	---	3.2	4.0	4.9	4.5	4.8	7.2	5.3	5.4
Time spent in reading activities (minutes per week):									
% Blending	---	6.6	5.1	6.2	4.5	10.1	6.3	7.4	6.2
% Letter Groups	---	8.6	5.6	7.5	4.7	8.3	4.4	8.1	4.1
% Sight Words	---	10.1	5.3	12.6	5.9	15.5	10.1	12.6	9.8
% Spelling Patterns	---	12.1	7.5	10.5	7.6	11.8	5.1	11.0	5.2
% Morphemes	---	5.9	3.8	7.0	3.5	7.0	4.2	6.4	3.8
% Syntax	---	4.5	3.4	6.8	4.4	6.1	3.9	6.7	3.3
% Punctuation	---	7.1	4.0	8.2	3.9	6.3	2.7	8.8	4.3
% Context Clues	---	12.9	6.6	11.7	7.7	10.2	3.6	12.3	5.7
% Comprehension	---	30.5	13.3	25.2	12.4	23.4	11.6	21.9	9.8
% Other	---	1.7	4.0	4.2	7.2	1.3	3.3	5.0	9.4
Attitude to Educational TV	5	3.7	0.9	3.7	0.7	4.2	0.7	3.7	0.8
Attitude to Phonics	5	4.4	0.7	4.6	0.7	4.7	0.5	4.4	0.8
Attitude to Linguistics	5	4.1	0.6	4.0	0.8	4.3	0.5	3.9	0.8
Attitude to *Sesame Street*	5	3.5	0.8	---	---	3.4	0.8	---	---
Attitude to *The Electric Company*	5	3.1	0.8	---	---	3.1	0.9	---	---
Attitude to Reading Performance	4	3.0	0.7	3.4	0.7	3.1	0.8	2.8	0.6
Job Satisfaction	1	0.7	0.2	---	---	0.7	0.2	---	---
Hours per week spent watching TV	---	---	---	2.5	1.8	---	---	0.7	1.9
Number of children in class	---	28.1	8.7	27.1	8.7	29.8	9.9	26.9	4.1
Number in class needing remedial help	---	11.1	8.9	6.2	4.2	10.2	6.7	7.6	6.5
Years of education completed	---	17.2	1.9	---	---	16.6	1.3	---	---
Years of teaching experience	---	12.7	11.5	---	---	13.9	8.9	---	---
FOR EXPERIMENTAL CLASSES ONLY:									
The Electric Company Viewing Index	4.75	---	---	4.6	0.3	---	---	---	---
Usefulness with reading difficulties	4	---	---	2.7	0.8	---	---	---	---
Usefulness in teaching reading skills	4	---	---	2.7	0.8	---	---	---	---
Appropriateness for the class	4	---	---	2.9	1.0	---	---	---	---
Time taken from other subject areas in order to watch *The Electric Company*:									
Regular reading		---	---	18.0	27.9	---	---	---	---
Language arts		---	---	22.3	26.4	---	---	---	---
Other academic subjects		---	---	21.6	28.0	---	---	---	---
Physical education		---	---	13.0	21.6	---	---	---	---
Lunch		---	---	8.6	22.2	---	---	---	---
Art or Music		---	---	15.9	16.8	---	---	---	---
Other		---	---	0.7	3.2	---	---	---	---

TABLE I-79

Interim Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Fresno and Youngstown, Grade 2 (in the second year of the first-second grade study)

Scales and Items	Fresno Experimental N=12 M	Fresno Experimental N=12 SD	Fresno Control N=13 M	Fresno Control N=13 SD	Youngstown Experimental N=13 M	Youngstown Experimental N=13 SD	Youngstown Control N=11 M	Youngstown Control N=11 SD
Time spent in classroom activities per week:								
%Miscellaneous	3.6	2.1	3.6	1.9	4.3	2.2	5.7	3.8
%Science	3.4	3.1	5.7	2.9	6.3	3.4	6.0	2.9
%Arithmetic	18.6	7.4	19.0	4.8	14.4	6.9	15.5	8.3
%Social Studies	4.9	3.6	7.7	4.4	6.3	1.8	7.3	2.5
%Physical Education	9.8	3.4	10.2	3.7	6.2	2.8	7.9	3.3
%Language	12.5	5.5	13.0	6.1	16.0	5.5	15.4	4.0
%Reading	46.3	10.5	37.8	10.5	39.9	9.2	36.3	8.1
%Other	0.9	2.2	2.8	5.5	6.5	6.4	5.4	5.3
FOR EXPERIMENTAL CLASSES ONLY								
Time taken from other subjects to watch The Electric Company:								
%Regular Reading	0.0	0.0	---	---	15.7	23.4	---	---
%Language arts	13.2	14.0	---	---	26.8	32.6	---	---
%Other academic subjects	44.3	28.2	---	---	22.8	18.4	---	---
%Physical education	4.5	7.2	---	---	20.5	26.0	---	---
%Lunch	9.1	30.2	---	---	2.2	4.8	---	---
%Art or Music	20.0	18.8	---	---	11.2	16.5	---	---
%Other	8.9	26.4	---	---	0.8	2.8	---	---
Number of children who regularly miss The Electric Company	1.82	0.4	---	---	1.83	0.4	---	---
The Electric Company viewing index (4.75 maximum)	4.41	0.5	---	---	4.73	0.1	---	---

TABLE I-80

Interim Teacher Questionnaire Scales and Selected Items for Experimental and Control Classes in Fresno and Youngstown, Grade 3 (in the second year of the second-third grade study)

	Fresno				Youngstown			
	Experimental N=15		Control N=16		Experimental N=23		Control N=23	
Scales and Items	M	SD	M	SD	M	SD	M	SD
Time spent in classroom activities per week:								
%Miscellaneous	5.2	5.9	3.7	2.5	6.0	4.5	5.0	3.2
%Science	5.1	3.5	6.1	3.3	8.0	3.6	8.2	3.0
%Arithmetic	21.7	4.8	19.1	4.8	17.8	5.2	20.5	6.1
%Social Studies	5.5	3.1	8.6	4.6	9.7	3.7	10.4	4.4
%Physical Education	8.7	2.3	9.3	5.8	6.8	3.1	5.9	2.7
%Language	11.7	7.2	14.4	6.5	13.1	6.2	16.0	5.4
%Reading	39.7	13.6	33.9	13.3	31.3	8.6	28.0	6.1
%Other	2.4	3.3	4.6	4.2	7.1	6.9	5.9	5.3
FOR EXPERIMENTAL CLASSES ONLY								
Time taken from other subjects to watch The Electric Company:								
%Regular Reading	7.9	26.7	---	---	23.3	29.1	---	---
%Language arts	23.4	32.8	---	---	20.1	23.0	---	---
%Other academic subjects	48.9	30.5	---	---	24.0	26.1	---	---
%Physical education	5.4	10.6	---	---	6.1	14.4	---	---
%Lunch	2.4	8.8	---	---	8.9	23.7	---	---
%Art or Music	12.1	17.6	---	---	16.3	25.7	---	---
%Other	0.0	0.0	---	---	1.3	4.6	---	---
Number of children who regularly miss The Electric Company	2.00	0.0	---	---	1.65	0.5	---	---
The Electric Company viewing index (4.75 maximum)	4.55	0.4	---	---	4.62	0.3	---	---

TABLE I-81

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Pretest CE Teacher Questionnaire Scales and Indices in Fresno and Youngstown, Grade 2

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
TIME SPENT PER WEEK IN CLASSROOM ACTIVITIES	1. Miscellaneous		0.31	-0.28	0.31	0.31	-0.21	-0.19	-0.29	0.50	0.30	-0.14
	2. Science	-0.56		-0.45	0.93	-0.16	0.29	-0.48	0.16	-0.18	-0.02	-0.27
	3. Arithmetic	-0.71	0.71		-0.25	0.07	-0.51	-0.04	-0.16	0.10	-0.31	0.16
	4. Social Studies	-0.47	0.85	0.73		-0.12	0.21	-0.59	0.19	-0.06	-0.02	-0.22
	5. Physical Education	-0.32	0.46	0.12	0.14		-0.03	-0.44	-0.32	-0.23	0.62	0.18
	6. Language	0.43	-0.10	-0.35	-0.15	0.10		-0.48	0.22	-0.16	0.50	-0.20
	7. Reading	-0.17	-0.36	-0.08	-0.31	-0.42	-0.76		-0.22	0.14	-0.41	-0.03
	8. Other	-0.05	-0.55	-0.46	-0.54	0.09	0.08	0.01		-0.24	-0.45	0.51
TIME SPENT PER WEEK IN READING ACTIVITIES	9. Blending	-0.22	0.22	0.37	-0.12	0.15	0.11	-0.01	-0.35		0.10	0.05
	10. Letter Groups	0.20	-0.46	-0.54	-0.54	-0.13	0.29	0.30	0.07	0.28		-0.17
	11. Sight Words	-0.39	0.58	0.74	0.59	-0.15	-0.33	0.09	-0.62	0.41	-0.16	
	12. Spelling Patterns	-0.06	0.05	0.09	-0.38	0.21	0.19	-0.08	-0.03	0.69	0.09	-0.06
	13. Morphemes	0.17	0.21	-0.02	-0.12	0.35	0.47	-0.36	-0.34	0.69	0.45	0.32
	14. Syntax	0.39	-0.43	-0.13	-0.18	-0.50	0.04	0.27	-0.30	-0.11	0.28	0.05
	15. Punctuation	0.54	-0.61	-0.55	-0.46	-0.43	-0.03	0.43	-0.05	-0.24	0.37	-0.31
	16. Context Clues	-0.00	0.21	0.14	0.39	-0.11	0.42	-0.24	-0.47	-0.03	0.13	0.02
	17. Comprehension	0.13	-0.27	-0.37	-0.05	0.11	-0.24	0.03	0.56	-0.85	-0.38	-0.56
	18. Other	-0.19	0.22	0.09	0.34	-0.19	0.37	-0.38	0.21	-0.11	-0.05	0.05
ATTITUDE TO:	19. Educational TV	0.23	0.10	0.22	0.13	-0.07	-0.38	0.11	-0.42	-0.12	-0.45	0.33
	20. Phonics	0.12	0.01	0.14	-0.04	0.04	0.37	-0.50	0.14	0.15	-0.24	0.05
	21. Linguistics	0.55	0.05	-0.13	-0.13	-0.06	0.46	-0.14	-0.64	0.51	0.47	0.16
	22. Sesame Street	-0.61	-0.04	0.18	0.48	0.00	-0.17	0.04	0.32	-0.56	-0.41	-0.59
	23. The Electric Company	-0.48	-0.11	0.10	0.39	-0.04	-0.04	0.00	0.50	-0.61	-0.16	-0.60
	24. Reading Performance	0.00	-0.43	-0.19	-0.35	-0.39	0.14	-0.09	0.78	-0.30	-0.21	-0.51
	25. Job Satisfaction	0.18	-0.37	0.15	-0.00	-0.57	0.14	-0.16	0.21	-0.17	-0.34	-0.25
	26. Number in class needing remedial help	0.40	-0.06	-0.26	-0.08	-0.24	-0.26	0.20	-0.06	-0.27	-0.14	0.09
	27. Number of children in class	0.04	0.03	-0.13	0.09	0.04	-0.14	-0.21	0.34	-0.66	-0.56	-0.42
	28. Years of education completed	0.02	-0.38	-0.34	-0.28	-0.39	0.22	0.08	0.48	-0.32	0.11	-0.29
	29. Years of teaching experience	0.57	-0.45	-0.62	-0.50	0.12	0.40	-0.33	0.49	-0.13	0.22	-0.15

12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
0.05	0.10	0.25	0.41	0.35	-0.39	-0.32	0.04	0.68	0.34	0.27	0.12	-0.10	-0.36	0.35	0.23	-0.43	0.05
-0.35	-0.43	-0.46	-0.13	-0.21	0.44	0.53	-0.23	-0.08	-0.21	-0.16	-0.11	0.40	-0.50	-0.10	0.72	0.22	-0.00
0.51	0.69	0.07	-0.18	-0.01	-0.21	-0.11	0.05	-0.26	0.27	0.38	0.33	-0.34	0.46	-0.02	-0.45	-0.06	0.03
-0.30	-0.26	-0.27	-0.12	-0.25	0.18	0.63	-0.11	0.01	0.06	0.09	0.13	0.20	-0.39	-0.03	0.70	-0.03	-0.09
0.13	0.06	0.12	0.56	0.32	-0.41	-0.25	0.58	0.08	0.23	0.62	0.34	-0.16	-0.57	-0.05	0.12	0.13	-0.54
-0.42	-0.52	-0.18	0.40	-0.55	0.08	0.38	0.26	-0.16	-0.11	-0.25	0.13	0.28	-0.13	-0.01	0.66	0.01	0.19
0.29	0.23	0.32	-0.35	0.54	0.17	-0.58	-0.27	0.22	-0.39	-0.44	-0.32	-0.02	0.30	0.04	-0.65	0.04	0.08
-0.56	-0.65	-0.54	-0.55	-0.82	0.25	0.91	-0.50	-0.47	0.31	0.08	-0.20	0.03	0.33	-0.20	-0.05	-0.05	0.12
0.22	0.25	0.41	0.25	0.15	-0.66	-0.45	0.32	0.59	0.58	0.19	0.54	-0.43	0.25	0.89	0.12	-0.53	0.22
0.10	0.07	0.20	0.95	0.13	-0.54	-0.36	0.74	0.50	0.18	0.36	0.50	0.32	-0.42	0.00	0.53	-0.21	-0.30
-0.43	-0.47	-0.43	-0.26	-0.37	-0.26	0.16	0.02	-0.39	0.51	0.55	0.35	-0.32	-0.05	0.25	-0.16	0.06	-0.40
	0.88	0.85	0.25	0.56	-0.44	-0.44	0.36	0.60	0.17	0.22	0.31	-0.36	0.39	-0.01	-0.47	-0.52	-0.05
0.40		0.58	0.24	0.54	-0.32	-0.51	0.08	0.47	0.09	0.13	0.16	-0.08	0.43	-0.13	-0.49	-0.33	0.06
-0.08	-0.03		0.36	0.55	-0.52	-0.46	0.60	0.83	0.25	0.12	0.33	-0.56	0.20	0.34	-0.22	-0.64	0.04
-0.27	-0.11	0.48		0.15	-0.61	-0.45	0.70	0.66	0.22	0.28	0.43	0.15	-0.24	0.11	0.39	-0.42	-0.07
-0.21	0.03	0.34	0.30		-0.14	-0.75	0.36	0.56	-0.25	0.07	0.10	-0.02	-0.36	0.08	-0.25	0.21	-0.37
-0.56	-0.69	-0.21	0.13	-0.28		0.40	-0.73	-0.65	-0.85	-0.77	-0.87	0.45	-0.08	-0.54	-0.08	0.68	0.29
0.05	-0.15	-0.13	-0.40	-0.53	0.07		-0.48	-0.61	0.10	-0.04	-0.22	0.06	0.13	-0.35	0.27	0.00	0.12
0.06	-0.01	0.48	0.13	-0.16	0.01	-0.62		0.14	0.21	0.56	0.77	-0.45	-0.43	0.52	0.42	0.03	-0.39
0.42	0.18	0.14	-0.62	-0.30	-0.17	0.29	0.20		0.21	0.17	0.21	-0.12	-0.03	0.25	-0.01	-0.73	0.04
0.34	0.70	0.42	0.40	0.55	-0.74	-0.32	0.13	-0.10		0.80	0.66	-0.42	0.24	0.39	0.03	-0.54	-0.18
-0.52	-0.79	-0.06	-0.05	0.38	0.61	0.32	-0.33	-0.32	-0.58		0.84	-0.23	-0.19	0.10	0.06	-0.24	-0.70
-0.64	-0.63	0.00	0.07	0.41	0.51	0.38	-0.37	-0.38	-0.60	0.91		-0.36	-0.26	0.61	0.53	-0.20	-0.56
0.09	-0.41	-0.15	-0.04	-0.30	0.33	0.33	-0.18	0.30	-0.51	0.20	0.44		-0.12	-0.66	0.19	0.35	-0.10
-0.22	-0.36	0.29	0.09	0.09	0.12	0.21	0.06	0.35	-0.25	0.42	0.46	0.56		-0.10	-0.60	-0.46	0.55
-0.29	0.07	-0.24	0.45	-0.29	0.29	-0.16	0.27	-0.50	0.09	-0.68	-0.48	0.14	-0.07		0.29	-0.18	0.11
-0.29	-0.40	-0.13	0.10	-0.10	0.75	-0.30	0.38	-0.09	-0.42	0.35	0.42	0.28	0.01	0.44		0.15	-0.16
0.20	-0.50	0.15	-0.10	0.00	0.16	0.49	-0.33	0.37	-0.29	0.35	0.32	0.59	0.23	-0.48	-0.11		-0.29
-0.03	0.29	-0.13	-0.09	-0.95	0.28	0.15	-0.13	0.43	-0.15	-0.41	-0.30	0.24	0.07	0.19	0.06	0.03	

Fresno scores are above diagonal, N=11 (2nd grade), N=10 (3rd grade). Youngstown scores are below diagonal, N=11 (2nd grade), N=22 (3rd grade).

TABLE I-82

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Pretest CE Teacher Questionnaire Scales and Indices in Fresno and Youngstown, Grade 3

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
TIME SPENT PER WEEK IN CLASSROOM ACTIVITIES	1. Miscellaneous		-0.10	0.60	0.11	-0.61	0.54	-0.68	-0.23	0.23	0.24	0.47
	2. Science	-0.18		-0.71	0.48	-0.01	0.06	0.20	-0.85	-0.23	0.07	-0.26
	3. Arithmetic	-0.05	0.36		-0.43	-0.42	0.21	-0.41	0.52	0.28	0.27	0.16
	4. Social Studies	0.06	0.48	0.32		-0.54	0.26	-0.32	-0.65	0.23	-0.41	0.31
	5. Physical Education	0.14	0.12	0.04	0.14		-0.66	0.73	0.32	-0.41	-0.14	-0.39
	6. Language	-0.04	-0.24	-0.71	-0.25	-0.25		-0.89	-0.46	0.27	0.26	0.72
	7. Reading	-0.47	-0.40	-0.05	-0.47	-0.32	-0.26		0.22	-0.16	-0.06	-0.87
	8. Other	-0.01	-0.61	-0.70	-0.62	-0.17	0.47	0.21		-0.17	0.11	0.04
TIME SPENT PER WEEK IN READING ACTIVITIES	9. Blending	-0.08	-0.08	-0.08	0.31	0.17	0.20	-0.21	-0.12		-0.42	-0.28
	10. Letter Groups	0.12	-0.52	-0.39	-0.32	-0.09	0.14	0.58	0.20	0.33		0.11
	11. Sight Words	-0.10	-0.24	0.16	-0.04	0.16	-0.09	0.11	-0.03	0.58	0.28	
	12. Spelling Patterns	-0.04	0.07	0.34	-0.14	-0.11	-0.24	0.09	-0.09	-0.43	-0.06	-0.14
	13. Morphemes	-0.12	0.22	-0.08	0.43	0.28	0.10	-0.35	-0.18	0.43	-0.14	0.55
	14. Syntax	0.26	0.25	0.07	0.26	0.21	-0.09	-0.42	-0.20	0.23	-0.22	0.29
	15. Punctuation	0.35	0.06	-0.18	-0.03	0.02	0.17	-0.22	-0.04	-0.23	-0.02	-0.19
	16. Context Clues	0.00	0.23	0.03	-0.03	0.11	0.00	-0.26	0.06	-0.49	-0.48	-0.33
	17. Comprehension	-0.26	0.04	-0.04	-0.02	-0.18	-0.04	0.26	0.11	-0.33	-0.19	-0.61
	18. Other	0.55	0.03	0.10	-0.12	-0.13	0.05	-0.39	0.01	-0.15	-0.30	-0.20
ATTITUDE TO:	19. Educational TV	0.10	0.14	0.44	0.01	0.04	-0.13	-0.22	-0.28	-0.35	-0.26	-0.00
	20. Phonics	0.19	0.04	-0.21	-0.29	0.32	0.04	-0.11	0.19	-0.30	-0.01	-0.20
	21. Linguistics	-0.35	0.24	0.07	0.01	0.04	-0.07	0.11	-0.09	-0.25	-0.15	-0.17
	22. Sesame Street	0.18	-0.06	-0.34	-0.19	0.21	0.23	-0.10	0.24	-0.23	-0.02	-0.31
	23. The Electric Company	0.15	0.21	-0.01	0.51	0.06	0.28	-0.51	-0.39	0.11	-0.08	-0.23
	24. Reading Performance	-0.31	0.01	0.05	-0.15	-0.03	0.10	-0.08	0.31	-0.45	-0.72	-0.21
	25. Job Satisfaction	-0.12	-0.10	-0.12	-0.35	0.23	-0.06	0.13	0.34	-0.51	-0.07	-0.13
	26. Number in class needing remedial help	-0.15	-0.02	0.15	0.35	-0.20	-0.11	0.17	-0.28	0.47	0.18	0.21
	27. Number of children in class	-0.13	0.06	0.30	0.36	-0.16	-0.35	0.16	-0.23	-0.08	-0.13	-0.07
	28. Years of education completed	-0.16	0.35	0.22	0.32	0.11	-0.12	-0.16	-0.33	0.30	-0.14	0.16
	29. Years of teaching experience	-0.18	-0.10	-0.16	-0.02	0.17	0.20	-0.04	0.10	0.18	0.02	-0.17

12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
0.19	-0.09	-0.17	-0.40	-0.12	-0.78	0.00	-0.18	-0.50	-0.35	-0.22	-0.42	-0.30	-0.27	0.31	-0.52	0.00	-0.09
0.32	-0.15	0.22	0.33	0.49	-0.38	0.00	-0.19	-0.10	-0.35	-0.37	0.12	-0.58	0.24	0.43	0.47	0.00	0.17
-0.18	0.27	-0.21	-0.32	-0.39	-0.07	0.00	-0.17	-0.25	-0.20	0.15	-0.56	0.26	-0.16	-0.22	-0.46	0.00	0.06
0.65	-0.18	-0.46	0.57	-0.17	-0.59	0.00	0.20	-0.02	-0.38	-0.28	0.00	-0.37	0.31	0.20	0.42	0.00	-0.13
-0.30	0.14	0.73	-0.35	0.33	0.61	0.00	0.34	0.48	0.76	0.37	0.48	0.39	-0.42	-0.21	-0.23	0.00	-0.17
0.04	-0.66	-0.71	-0.05	-0.12	-0.57	0.00	-0.69	-0.91	-0.49	-0.80	-0.55	-0.80	0.52	0.80	0.11	0.00	0.32
-0.05	0.35	0.53	0.22	0.22	0.62	0.00	0.44	0.74	0.30	0.55	0.56	0.59	-0.31	-0.54	0.04	0.00	0.04
-0.62	0.29	0.15	-0.38	-0.14	0.61	0.00	0.22	0.43	0.56	0.71	0.19	0.76	-0.32	-0.71	-0.27	0.00	-0.32
0.69	0.16	-0.66	0.53	-0.88	0.03	0.00	0.41	-0.36	-0.60	-0.22	-0.51	0.25	0.17	0.13	-0.27	0.00	0.70
-0.71	-0.48	0.03	-0.36	0.66	-0.10	0.00	-0.95	-0.35	-0.13	0.29	0.45	-0.21	-0.12	0.02	0.03	0.00	-0.02
-0.23	-0.49	-0.22	-0.45	0.16	-0.54	0.00	-0.17	-0.55	0.28	-0.33	0.00	-0.48	-0.12	0.32	-0.11	0.00	-0.78
	0.35	-0.26	0.55	-0.63	-0.36	0.00	0.72	-0.06	-0.50	-0.54	-0.52	-0.17	0.10	0.28	-0.07	0.00	0.31
-0.25		0.39	0.14	-0.43	0.17	0.00	0.50	0.44	-0.06	0.54	-0.73	0.59	-0.05	-0.68	-0.06	0.00	0.14
-0.25	0.49		-0.56	0.53	0.08	0.00	0.15	0.52	0.60	0.14	0.17	0.14	-0.59	-0.17	-0.20	0.00	-0.40
-0.49	0.10	0.28		-0.43	0.14	0.00	0.16	0.27	-0.66	0.20	-0.17	-0.04	0.83	-0.13	0.65	0.00	0.61
-0.08	0.07	0.16	0.60		-0.14	0.00	-0.59	0.18	0.35	-0.04	0.72	-0.48	-0.21	0.19	0.24	0.00	-0.45
-0.01	-0.57	-0.58	-0.27	-0.23		0.00	0.05	0.60	0.35	0.39	0.30	0.77	0.24	-0.49	0.12	0.00	0.43
0.04	-0.27	0.15	0.07	0.19	-0.13		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.45	-0.13	0.21	0.08	0.38	-0.30	0.19		0.10	0.27	0.21	0.40	0.44	-0.61	-0.14	-0.14	0.80	-0.36
0.30	-0.06	0.00	-0.01	0.08	-0.03	0.14	0.14		0.45	0.89	0.74	0.74	-0.21	-0.86	-0.11	-0.51	-0.34
0.10	-0.05	-0.18	-0.03	0.26	0.17	-0.12	0.18	0.60		0.62	0.54	0.44	-0.49	-0.32	-0.32	0.14	-0.67
-0.01	-0.10	-0.62	0.15	0.07	0.34	-0.06	-0.44	-0.05	-0.37		0.67	0.87	-0.43	-0.95	-0.24	-0.22	-0.49
0.20	0.33	-0.13	0.21	0.37	-0.37	0.16	0.26	0.50	0.53	0.00		0.51	-0.54	-0.44	-0.04	0.00	-0.55
0.17	0.04	0.01	-0.04	0.48	0.18	0.15	0.16	0.12	0.19	0.06	-0.16		-0.40	-0.86	-0.39	-0.00	-0.20
0.47	-0.04	-0.20	-0.01	0.47	-0.12	-0.13	0.21	0.49	0.51	0.14	0.17	0.34		0.09	0.38	-0.47	0.67
-0.43	-0.08	-0.18	-0.23	-0.64	0.42	-0.21	-0.37	-0.49	-0.15	-0.07	-0.30	-0.44	-0.66		0.17	0.27	0.19
-0.13	-0.12	0.02	-0.22	-0.27	0.49	-0.25	-0.09	-0.15	0.26	-0.52	-0.35	-0.07	-0.17	0.52		0.00	-0.02
0.01	0.23	0.28	-0.30	0.01	-0.22	0.14	-0.12	-0.34	-0.12	-0.35	0.03	-0.03	-0.06	-0.03	0.16		-0.22
-0.10	-0.24	-0.10	-0.29	0.10	0.11	0.21	0.05	-0.09	0.10	-0.26	0.19	0.00	0.09	-0.04	0.11	0.55	

Fresno scores are above diagonal, N=11 (2nd grade), N=10 (3rd grade). Youngstown scores are below diagonal, N=11 (2nd grade), N=22 (3rd grade).

TABLE I-83

Intercorrelations of Posttest CE Teacher Questionnaire Scales and Indices with Posttest CE Teacher Questionnaire Scales and Indices in Fresno and Youngstown, Grade 2

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
TIME SPENT PER WEEK IN CLASSROOM ACTIVITIES	1. Miscellaneous		0.32	0.33	0.55	0.56	0.14	−0.79	0.30	0.36	0.05	0.16	0.40	0.02	0.40	0.15	−0.18
	2. Science	0.40		−0.52	0.35	0.50	0.33	−0.66	0.13	−0.13	−0.02	−0.18	0.79	0.21	−0.21	−0.32	0.18
	3. Arithmetic	0.39	0.72		0.32	0.02	−0.11	−0.17	−0.00	0.01	0.52	0.19	−0.38	0.00	0.31	0.82	−0.53
	4. Social Studies	0.16	0.82	0.54		0.47	0.40	−0.67	−0.41	−0.14	0.33	−0.00	0.83	0.60	0.01	0.23	−0.10
	5. Physical Education	−0.16	−0.37	−0.41	−0.19		−0.02	−0.70	0.35	−0.11	−0.14	−0.25	0.29	0.08	0.33	0.18	0.11
	6. Language	0.19	0.31	−0.04	0.34	0.13		−0.49	−0.74	−0.33	0.22	−0.04	0.67	0.67	−0.00	0.20	0.06
	7. Reading	−0.46	−0.83	−0.66	−0.70	0.24	−0.59		−0.03	0.10	−0.18	0.08	−0.65	−0.35	−0.26	−0.29	0.06
	8. Other	−0.40	−0.69	−0.76	−0.67	−0.03	−0.06	0.48		0.38	−0.34	−0.05	−0.43	−0.64	0.36	−0.11	0.03
TIME SPENT PER WEEK IN READING ACTIVITIES	9. Blending	−0.69	−0.31	−0.42	−0.14	0.16	0.34	0.11	0.50		0.07	0.85	0.11	−0.23	−0.27	−0.42	−0.53
	10. Letter Groups	−0.55	−0.14	−0.06	−0.05	−0.22	−0.58	0.33	0.23	0.24		0.36	0.24	0.25	−0.48	0.52	−0.79
	11. Sight Words	0.08	0.46	0.65	0.25	−0.06	0.22	−0.64	−0.34	0.03	−0.34		0.12	−0.10	−0.53	−0.25	−0.77
	12. Spelling Patterns	−0.55	−0.01	−0.06	−0.07	−0.29	−0.11	−0.04	0.46	0.49	0.23	0.45		0.65	−0.24	−0.19	0.00
	13. Morphemes	−0.25	0.03	−0.06	−0.04	0.10	−0.17	0.35	−0.22	0.05	0.45	−0.39	−0.33		0.11	0.31	0.15
	14. Syntax	−0.16	0.19	−0.18	0.48	0.34	0.63	−0.21	−0.21	0.35	−0.10	−0.12	−0.20	0.34		0.42	0.54
	15. Punctuation	−0.49	−0.21	−0.42	−0.22	0.12	0.03	0.06	0.63	0.68	0.18	0.20	0.80	−0.30	−0.08		−0.25
	16. Context Clues	0.64	0.23	0.19	−0.07	−0.37	0.18	−0.13	−0.18	−0.10	−0.30	−0.14	−0.40	0.18	−0.13	−0.30	
	17. Comprehension	0.55	−0.07	0.04	0.03	0.06	−0.25	0.15	−0.28	−0.83	−0.23	−0.41	−0.69	−0.10	−0.16	−0.73	0.05
	18. Other	−0.26	−0.16	−0.27	−0.06	0.43	0.49	0.08	0.00	0.43	−0.18	−0.18	−0.34	0.28	0.31	−0.08	0.06
ATTITUDE TO:	19. Educational TV	0.19	0.19	−0.08	0.37	0.25	0.27	−0.30	−0.09	−0.21	−0.50	0.25	0.18	−0.55	0.31	0.16	−0.39
	20. Phonics	0.02	0.18	0.29	0.20	−0.26	−0.38	−0.15	−0.06	−0.31	0.16	0.35	0.47	−0.32	−0.12	0.13	−0.42
	21. Linguistics	0.07	0.16	0.15	0.25	−0.72	−0.37	−0.06	0.13	−0.39	0.34	0.01	0.50	−0.41	−0.17	0.10	−0.30
	22. Reading Performance	0.22	0.51	0.38	0.37	−0.06	−0.23	−0.38	−0.31	−0.60	0.08	0.25	0.05	−0.19	−0.28	−0.10	−0.37
	23. Hours per week class watches TV	−0.30	−0.27	−0.13	−0.31	−0.01	−0.26	0.34	0.20	0.43	0.25	−0.13	0.13	0.09	−0.42	0.35	0.27
	24. Number in class needing remedial help	−0.28	−0.04	−0.07	0.19	−0.23	0.38	−0.10	0.17	0.79	0.08	−0.00	0.32	−0.03	0.43	0.51	0.29
	25. Number of children in class	0.51	0.20	0.33	−0.02	−0.42	0.42	−0.39	−0.09	−0.27	−0.68	0.34	−0.10	−0.46	−0.28	−0.33	0.44
	26. *The Electric Company* Viewing Index	0.44	0.28	0.27	0.27	−0.09	0.22	−0.08	−0.58	−0.43	−0.26	−0.22	−0.70	0.52	0.44	−0.84	0.48
	27. Usefulness with reading difficulties	−0.21	−0.07	−0.00	0.06	0.33	−0.28	−0.01	0.02	−0.24	0.08	0.28	0.30	−0.31	−0.04	0.16	−0.85
	28. Usefulness in teaching reading skills	−0.25	−0.22	−0.37	−0.08	0.36	−0.19	0.18	0.28	−0.15	−0.09	0.01	0.31	−0.45	−0.17	0.32	−0.74
	29. Appropriateness for the class	−0.07	0.09	−0.04	0.27	0.32	0.23	−0.28	−0.02	−0.14	−0.31	0.36	0.25	−0.47	0.27	0.12	−0.72
TIME TAKEN FROM OTHER SUBJECTS TO WATCH THE ELECTRIC COMPANY	30. Regular Reading	−0.34	−0.19	−0.30	−0.09	0.50	0.38	0.19	−0.03	0.36	−0.09	−0.24	−0.37	0.42	0.35	−0.14	−0.05
	31. Language Arts	−0.29	−0.37	−0.31	−0.17	−0.05	0.13	0.29	0.29	0.26	−0.13	−0.05	0.26	−0.03	0.39	0.05	−0.18
	32. Other Academic Subjects	0.11	0.44	0.04	0.39	−0.26	−0.03	−0.16	−0.12	−0.38	0.32	−0.29	−0.10	0.37	0.30	−0.25	−0.11
	33. Physical Education	0.51	0.45	0.80	0.43	−0.35	−0.02	−0.50	−0.63	−0.51	−0.35	0.46	−0.20	−0.45	−0.33	−0.49	0.19
	34. Lunch	−0.44	−0.30	−0.28	−0.27	0.11	−0.22	0.09	0.58	0.43	[illegible]	0.21	0.69	−0.53	−0.43	0.84	−0.49
	35. Art or Music	0.65	0.09	0.03	−0.23	0.12	−0.06	−0.05	−0.11	−0.34	−0.12	−0.10	−0.38	0.23	−0.05	−0.11	0.59
	36. Other	0.10	−0.03	0.20	−0.17	−0.36	−0.50	0.31	−0.15	−0.04	0.26	−0.18	−0.08	0.28	−0.44	−0.08	0.61

17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.
-0.75	0.32	0.37	0.48	0.51	-0.54	0.00	0.41	0.63	0.12	0.87	0.68	0.16	0.33	-0.40	0.09	0.00	0.25	-0.03	0.25
0.06	-0.03	0.27	-0.10	-0.31	-0.36	-0.27	0.20	0.55	-0.05	0.05	0.37	-0.63	0.58	-0.36	0.05	-0.54	-0.01	0.26	-0.08
-0.55	0.01	-0.12	0.30	0.38	0.09	-0.07	-0.02	0.08	-0.13	0.39	0.14	0.76	-0.54	0.11	0.34	0.29	0.13	-0.57	0.47
-0.33	-0.34	0.71	0.56	0.19	-0.34	-0.35	0.25	0.46	-0.02	0.54	0.69	-0.01	0.18	-0.04	-0.35	0.10	0.22	0.20	0.12
-0.39	0.41	0.14	-0.10	0.24	-0.18	-0.08	0.14	0.59	-0.47	0.40	0.43	-0.27	0.48	0.01	-0.29	-0.19	0.29	0.18	-0.40
0.03	-0.64	0.60	0.23	-0.08	-0.05	-0.45	0.19	0.13	-0.04	0.35	0.67	-0.21	0.01	-0.40	0.05	-0.29	0.54	0.23	0.32
0.49	-0.01	-0.43	-0.26	-0.15	0.36	0.32	-0.28	-0.71	0.16	-0.66	-0.76	0.11	-0.33	0.42	-0.13	0.32	-0.40	-0.06	-0.18
-0.41	0.90	-0.55	-0.26	0.13	-0.10	0.42	-0.08	0.16	-0.00	-0.00	-0.22	0.12	0.21	-0.07	0.27	-0.05	-0.24	-0.18	-0.24
-0.39	-0.02	0.18	0.13	0.61	-0.61	0.04	0.73	0.09	0.41	0.29	-0.14	0.00	-0.02	-0.04	-0.09	0.69	-0.43	0.00	0.03
-0.34	-0.38	0.18	-0.06	0.40	-0.33	-0.26	0.30	0.05	-0.41	-0.03	-0.13	-0.08	-0.14	-0.04	0.53	0.13	-0.45	-0.53	0.59
-0.18	-0.42	0.18	0.04	0.45	-0.48	-0.34	0.85	0.11	0.29	0.20	-0.08	0.02	-0.33	0.17	-0.02	0.64	-0.38	-0.20	0.24
-0.19	-0.44	0.94	0.31	0.13	-0.57	-0.33	0.38	0.35	0.04	0.29	0.35	-0.58	0.44	-0.59	-0.15	0.00	0.00	0.53	0.00
-0.20	-0.62	0.75	0.10	0.13	0.00	-0.27	-0.13	-0.11	-0.22	0.09	0.06	-0.12	-0.14	-0.62	0.11	0.27	0.29	0.57	-0.18
-0.43	0.49	-0.11	0.23	0.23	0.35	0.40	-0.50	-0.01	-0.06	0.48	0.32	0.55	-0.02	-0.44	0.22	-0.10	0.72	0.20	-0.20
-0.51	0.04	-0.13	-0.07	0.35	0.27	0.01	-0.29	-0.02	-0.66	0.23	0.11	0.43	-0.30	-0.16	0.63	-0.07	0.31	-0.43	0.31
0.36	0.24	0.02	0.09	-0.58	0.44	0.29	-0.70	-0.18	0.19	-0.15	0.08	-0.01	0.23	-0.27	-0.29	-0.34	0.48	0.65	-0.53
	-0.29	-0.27	-0.23	-0.92	0.43	-0.25	-0.24	-0.22	0.27	-0.66	-0.17	-0.23	-0.15	0.53	-0.43	-0.34	-0.04	0.11	-0.16
-0.18		-0.50	-0.04	0.20	-0.01	0.65	-0.26	0.13	-0.14	0.16	0.01	0.08	0.53	0.07	-0.03	-0.32	-0.03	-0.21	-0.14
0.22	-0.36		0.40	0.30	-0.57	-0.12	0.35	0.27	0.11	0.47	0.37	-0.32	0.27	-0.41	-0.34	0.29	0.12	0.58	-0.01
0.10	-0.90	0.55		0.26	-0.09	-0.22	0.07	-0.07	0.57	0.45	0.42	0.40	0.04	-0.22	-0.10	0.12	0.18	0.08	0.39
0.27	-0.89	0.54	0.90		-0.37	0.14	0.42	-0.09	-0.23	0.52	-0.01	0.08	0.16	-0.18	-0.10	0.59	-0.06	0.01	0.00
0.35	-0.35	0.34	0.43	0.37		-0.21	-0.67	-0.60	-0.12	-0.45	-0.22	0.40	-0.47	0.21	0.09	-0.20	0.42	-0.02	-0.22
-0.41	0.40	-0.62	-0.56	-0.50	-0.38		-0.37	-0.01	-0.05	0.05	-0.23	0.05	0.30	-0.16	0.05	0.04	-0.15	0.03	-0.15
-0.63	0.18	-0.16	-0.20	-0.05	-0.77	0.37		0.45	0.12	0.43	0.32	-0.32	0.13	0.16	-0.24	0.26	-0.21	-0.13	0.23
0.19	0.10	0.02	-0.17	-0.17	-0.03	-0.11	-0.01		-0.05	0.61	0.71	-0.20	0.31	-0.01	-0.06	-0.21	0.17	-0.12	0.17
0.43	0.10	-0.09	-0.16	-0.13	-0.19	-0.40	0.00	0.22		0.11	0.12	0.34	-0.19	-0.15	-0.01	0.16	-0.04	0.18	0.20
0.21	-0.43	0.61	0.70	0.50	0.62	-0.54	-0.59	-0.31	-0.36		0.80	0.24	0.14	-0.29	-0.05	0.07	0.51	0.01	0.27
0.25	-0.14	0.62	0.35	0.31	0.55	-0.24	-0.66	-0.17	-0.54	0.79		0.03	0.21	-0.19	-0.08	-0.46	0.68	-0.00	0.34
0.17	-0.24	0.85	0.56	0.42	0.48	-0.72	-0.35	-0.00	-0.19	0.85	0.74		-0.70	-0.04	0.39	0.27	0.30	-0.32	0.30
-0.12	0.97	-0.36	-0.84	-0.87	-0.27	0.31	0.04	-0.02	0.16	-0.31	-0.07	-0.18		-0.15	-0.35	-0.39	-0.17	0.26	-0.17
-0.09	-0.22	0.32	0.35	0.39	-0.53	-0.41	0.39	0.03	0.22	0.13	-0.00	0.30	-0.19		-0.54	0.05	-0.21	-0.37	-0.11
0.28	-0.33	0.18	0.33	0.53	0.53	-0.62	-0.39	-0.24	0.33	0.25	0.12	0.24	-0.20	-0.02		-0.22	-0.06	-0.47	0.53
0.36	-0.20	0.10	0.19	0.25	0.26	-0.04	-0.02	0.56	0.20	-0.02	-0.15	0.03	-0.29	-0.23	-0.25		-0.27	0.25	-0.27
-0.43	-0.10	0.10	0.17	0.13	0.18	0.40	0.06	-0.24	-1.00	0.37	0.55	0.20	-0.16	-0.21	-0.34	-0.20		0.27	-0.10
0.16	-0.29	-0.07	0.00	-0.15	-0.02	-0.11	-0.21	-0.10	0.29	-0.21	-0.36	-0.29	-0.29	-0.20	0.15	-0.15	-0.29		-0.71
-0.09	-0.10	-0.59	-0.19	-0.08	-0.35	0.70	0.30	-0.06	0.10	-0.62	-0.56	-0.85	-0.16	-0.22	-0.33	0.21	-0.10	0.25	

Fresno scores are above diagonal, N=11 (2nd grade), N=10 (3rd grade). Youngstown scores are below diagonal, N=11 (2nd grade), N=22 (3rd grade).

TABLE I-84

Intercorrelations of Posttest CE Teacher Questionnaire Scales and Indices with Posttest Teacher Questionnaire Scales and Indices in Fresno and Youngstown, Grade 3

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
TIME SPENT PER WEEK IN CLASSROOM ACTIVITIES	1. Miscellaneous		0.18	-0.44	0.06	0.24	-0.37	-0.60	0.82	0.21	-0.28	-0.19	-0.41	-0.53	0.04	0.31	-0.27
	2. Science	0.08		-0.55	0.89	0.01	-0.13	-0.20	-0.27	-0.32	-0.52	-0.00	-0.66	-0.93	0.21	0.11	-0.40
	3. Arithmetic	-0.34	0.07		-0.51	-0.56	-0.01	0.21	-0.06	0.08	0.59	0.18	0.49	0.58	0.10	-0.27	0.08
	4. Social Studies	-0.03	0.60	0.07		0.06	0.03	-0.21	-0.40	-0.52	-0.53	0.07	-0.58	-0.87	0.23	0.18	-0.16
	5. Physical Education	0.49	0.17	-0.52	0.14		-0.10	-0.18	0.10	-0.11	-0.61	-0.76	-0.28	-0.04	0.14	0.66	0.36
	6. Language	-0.06	-0.00	-0.71	-0.16	0.05		-0.34	-0.11	-0.56	-0.28	0.43	-0.38	0.34	-0.23	-0.30	0.24
	7. Reading	-0.25	-0.79	-0.00	-0.66	-0.21	-0.10		-0.65	0.64	0.69	-0.01	0.81	0.12	-0.20	-0.10	-0.12
	8. Other	-0.13	-0.18	0.26	-0.17	-0.38	-0.11	-0.20		0.41	-0.01	-0.12	-0.03	0.44	-0.06	-0.04	0.02
TIME SPENT PER WEEK IN READING ACTIVITIES	9. Blending	0.12	-0.09	-0.54	-0.26	0.17	0.75	0.05	-0.33		0.36	-0.20	0.75	0.18	-0.09	0.01	-0.13
	10. Letter Groups	0.19	-0.03	-0.43	-0.08	0.27	0.50	-0.07	-0.23	0.75		0.39	0.62	0.41	-0.10	-0.33	0.00
	11. Sight Words	-0.20	-0.38	0.43	-0.29	-0.14	-0.28	0.31	0.15	0.05	0.01		0.02	-0.06	-0.59	-0.78	-0.45
	12. Spelling Patterns	0.05	0.09	0.18	0.35	-0.17	-0.19	-0.33	0.38	-0.35	0.11	-0.20		0.45	-0.13	-0.11	0.09
	13. Morphemes	-0.09	-0.12	-0.37	-0.19	0.32	0.39	-0.00	0.10	0.35	0.08	0.24	-0.35		-0.04	-0.09	0.50
	14. Syntax	-0.23	0.22	-0.04	-0.17	0.08	0.26	-0.09	-0.03	0.13	0.04	0.12	-0.38	0.30		0.72	0.64
	15. Punctuation	0.09	0.34	-0.16	0.10	0.36	0.21	-0.29	-0.22	-0.03	-0.21	-0.11	-0.39	0.48	0.50		0.66
	16. Context Clues	0.48	0.51	-0.15	0.06	0.32	-0.14	-0.24	-0.24	-0.13	-0.10	-0.39	-0.24	-0.34	-0.01	0.09	
	17. Comprehension	-0.20	-0.22	0.41	0.19	-0.22	-0.65	0.33	-0.01	-0.67	-0.68	-0.02	0.09	-0.28	-0.45	-0.24	-0.06
	18. Other	-0.12	-0.04	-0.24	-0.18	-0.27	0.56	-0.06	0.15	0.33	0.12	-0.33	-0.12	-0.04	0.17	0.09	-0.14
ATTITUDE TO:	19. Educational TV	-0.17	0.11	-0.15	-0.20	0.05	0.19	0.14	-0.19	0.16	0.02	0.19	-0.03	0.26	0.12	0.11	-0.06
	20. Phonics	0.03	-0.00	0.00	-0.10	0.04	-0.30	0.13	0.18	-0.23	-0.25	0.14	0.16	0.12	-0.09	-0.18	0.05
	21. Linguistics	-0.15	0.08	-0.10	0.15	0.31	-0.19	0.07	-0.12	-0.19	-0.11	0.12	-0.01	-0.05	-0.11	-0.09	0.12
	22. Reading Performance	-0.54	0.14	0.57	0.27	-0.23	-0.33	-0.21	0.38	-0.35	-0.34	0.35	-0.05	0.06	0.23	0.04	-0.19
	23. Hours per week class watches TV	-0.10	-0.29	-0.44	0.08	0.43	0.16	0.15	-0.06	0.01	0.09	0.07	-0.24	0.34	0.34	0.15	-0.09
	24. Number in class needing remedial help	0.19	0.10	0.23	0.03	-0.28	-0.19	-0.14	0.18	-0.10	0.06	-0.32	0.30	-0.41	-0.02	-0.22	0.22
	25. Number of children in class	-0.10	-0.30	0.32	-0.10	-0.31	-0.38	0.48	-0.21	-0.21	-0.26	0.01	-0.00	-0.33	-0.17	-0.22	0.00
	26. The Electric Company Viewing Index	0.31	-0.45	-0.17	-0.19	0.33	-0.15	0.37	-0.22	0.02	-0.13	0.00	-0.11	-0.03	-0.37	-0.10	-0.06
	27. Usefulness with reading difficulties	-0.27	0.15	0.01	0.25	-0.15	-0.17	0.11	-0.12	-0.08	0.01	-0.27	0.13	-0.35	-0.19	-0.46	0.23
	28. Usefulness in teaching reading skills	-0.32	0.24	-0.12	0.08	-0.05	0.02	0.10	-0.19	-0.02	0.13	-0.23	0.23	-0.28	-0.17	-0.27	0.28
	29. Appropriateness for the class	-0.07	0.14	-0.02	0.06	-0.04	-0.10	0.05	-0.07	0.04	0.18	-0.09	0.32	-0.16	-0.01	-0.22	-0.05
TIME TAKEN FROM OTHER SUBJECTS TO WATCH THE ELECTRIC COMPANY	30. Regular Reading	0.08	0.14	-0.30	0.26	0.22	0.44	-0.44	0.08	0.45	0.21	-0.11	-0.11	0.29	0.17	0.06	-0.09
	31. Language Arts	-0.00	0.62	0.15	0.23	0.20	-0.04	-0.52	0.02	-0.05	0.05	-0.15	0.02	0.11	0.15	0.29	0.24
	32. Other Academic Subjects	-0.08	-0.28	-0.29	-0.18	-0.15	0.09	0.34	0.10	-0.17	0.03	-0.28	0.08	-0.10	-0.05	0.06	-0.07
	33. Physical Education	0.10	-0.20	0.25	-0.42	0.09	-0.27	0.40	-0.27	-0.01	-0.18	0.36	-0.21	-0.05	0.07	-0.04	0.09
	34. Lunch	-0.30	-0.07	0.51	-0.03	-0.36	-0.39	0.42	-0.40	-0.09	-0.24	0.34	-0.21	-0.26	0.10	-0.25	-0.07
	35. Art or Music	0.03	-0.48	0.11	0.08	-0.34	-0.24	0.27	0.19	-0.27	-0.09	0.20	0.40	-0.23	-0.64	-0.49	-0.22
	36. Other	0.03	0.14	0.28	-0.01	-0.13	-0.20	-0.16	0.24	-0.33	-0.14	0.15	0.12	-0.30	0.24	0.03	0.16

17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.
0.20	0.43	-0.46	-0.28	-0.45	-0.61	-0.22	0.85	-0.49	0.02	-0.49	-0.59	-0.49	0.36	0.23	-0.19	-0.26	0.15	-0.45	0.00
0.65	-0.16	-0.32	0.12	-0.40	-0.11	-0.23	0.10	-0.36	-0.03	-0.06	0.07	-0.01	0.42	0.33	-0.43	-0.35	-0.14	-0.09	0.00
-0.53	-0.06	0.27	-0.32	0.25	0.13	0.43	-0.28	0.22	0.08	0.26	0.20	0.29	-0.35	-0.52	0.30	0.37	-0.06	0.53	0.00
0.67	-0.57	-0.47	0.16	-0.39	-0.26	-0.41	0.07	-0.05	-0.06	-0.21	-0.03	-0.11	0.43	0.43	-0.43	-0.43	-0.55	-0.06	0.00
0.44	0.12	-0.30	0.16	-0.28	-0.10	0.14	-0.12	0.03	0.04	-0.53	-0.56	-0.69	0.14	0.66	-0.15	-0.45	0.10	-0.57	0.00
0.20	-0.28	0.25	0.18	-0.16	-0.19	-0.60	-0.35	0.52	-0.42	0.17	0.27	0.18	-0.18	0.12	0.18	-0.42	-0.24	0.26	0.00
-0.64	0.12	0.42	0.35	0.85	0.85	0.52	-0.35	0.05	0.30	0.41	0.41	0.45	-0.12	-0.36	-0.01	0.73	0.16	0.07	0.00
-0.27	0.77	-0.20	-0.47	-0.49	-0.56	-0.19	0.64	-0.30	-0.11	-0.27	-0.41	-0.34	-0.08	-0.05	0.23	-0.16	0.32	-0.18	0.00
-0.67	0.53	0.03	-0.08	0.41	0.64	0.40	0.22	-0.55	-0.10	0.07	0.10	0.08	-0.39	-0.53	0.42	0.78	0.53	-0.14	0.00
-0.84	0.10	0.51	0.06	0.82	0.57	0.26	0.33	0.19	0.33	0.42	0.34	0.53	-0.08	-0.48	0.08	0.59	0.10	0.16	0.00
-0.07	-0.31	0.32	-0.08	0.39	-0.28	-0.46	0.50	0.11	0.07	0.34	0.38	0.61	0.26	-0.43	-0.23	0.24	-0.31	0.45	0.00
-0.80	0.04	0.09	-0.17	0.62	0.52	0.37	0.00	-0.04	0.04	0.16	0.11	0.18	-0.44	-0.64	0.44	0.86	0.04	0.16	0.00
-0.57	0.25	0.48	-0.07	0.26	0.28	0.16	-0.50	0.47	-0.13	0.25	0.15	0.11	-0.60	-0.25	0.58	0.14	0.25	0.16	0.00
-0.13	-0.12	-0.44	0.29	-0.46	0.05	0.06	-0.32	0.11	-0.37	-0.22	-0.06	-0.37	-0.29	0.46	0.32	-0.44	-0.12	-0.33	0.00
0.02	-0.13	-0.67	0.59	-0.28	-0.08	0.21	-0.16	-0.05	-0.37	-0.73	-0.65	-0.86	0.05	0.75	0.01	-0.43	-0.13	-0.79	0.00
-0.28	-0.25	-0.23	0.52	-0.12	0.00	-0.16	-0.43	0.59	-0.44	-0.30	-0.18	-0.44	-0.40	0.51	0.45	-0.43	-0.25	-0.40	0.00
	-0.22	-0.25	-0.15	-0.61	-0.60	-0.26	-0.15	-0.04	0.10	-0.27	-0.25	-0.26	0.44	0.45	-0.48	-0.61	-0.22	0.05	0.00
-0.48		0.53	-0.18	0.00	0.62	0.40	-0.01	-0.41	0.16	0.43	0.24	0.21	-0.26	-0.25	0.23	0.22	1.00	-0.08	0.00
-0.20	-0.05		0.01	0.58	0.63	0.14	-0.33	0.37	0.45	0.84	0.70	0.80	-0.23	-0.42	0.09	0.28	0.52	0.45	0.00
0.20	-0.32	0.40		0.39	0.38	-0.03	-0.21	0.15	-0.36	-0.13	0.03	-0.11	0.22	0.57	-0.21	-0.18	-0.08	-0.65	0.00
0.21	-0.34	0.49	0.40		0.67	0.36	-0.04	0.23	0.39	0.31	0.24	0.44	0.18	-0.31	-0.25	0.66	0.00	0.02	0.00
0.15	-0.04	-0.31	-0.07	-0.10		0.46	-0.55	0.10	0.21	0.66	0.64	0.56	-0.34	-0.27	0.19	0.48	0.50	0.08	0.00
0.02	-0.18	-0.20	-0.06	0.13	0.18		-0.30	-0.32	0.34	-0.03	-0.16	-0.09	0.05	-0.15	-0.16	0.44	0.41	-0.07	0.00
-0.02	0.02	-0.23	-0.01	-0.10	-0.20	-0.35		-0.37	0.16	-0.37	-0.44	-0.22	0.49	0.00	-0.32	0.03	-0.09	-0.29	0.00
0.43	-0.15	-0.00	0.12	-0.00	-0.01	-0.15	0.47		0.16	0.24	0.28	0.23	-0.23	0.18	0.17	-0.32	-0.39	0.25	0.00
0.33	-0.10	-0.20	-0.08	0.07	-0.30	0.04	0.06	0.16		0.28	0.07	0.34	0.34	-0.22	-0.47	0.24	0.14	0.31	0.00
0.21	-0.04	0.17	0.29	0.35	0.01	-0.04	0.40	0.48	-0.13		0.95	0.95	-0.49	-0.61	0.36	0.36	0.43	0.65	0.00
-0.03	-0.01	0.55	0.43	0.57	-0.25	-0.20	0.23	0.20	-0.20	0.78		0.91	-0.52	-0.51	0.41	0.28	0.26	0.60	0.00
-0.05	-0.08	0.53	0.48	0.38	-0.19	-0.36	0.37	0.38	-0.13	0.53	0.61		-0.27	-0.66	0.16	0.44	0.24	0.70	0.00
-0.33	0.25	-0.18	-0.18	0.10	0.10	0.14	0.23	-0.14	0.09	-0.01	-0.23	-0.11		0.43	-0.97	-0.21	-0.27	-0.37	0.00
-0.15	-0.12	0.15	-0.15	0.03	0.37	-0.14	-0.25	-0.37	-0.44	0.02	0.07	-0.05	-0.10		-0.38	-0.81	-0.25	-0.73	0.00
0.02	0.32	-0.17	0.09	-0.09	-0.32	0.17	0.04	0.00	0.00	0.09	0.25	0.07	-0.49	-0.26		0.16	0.22	0.25	0.00
0.08	-0.20	0.34	0.18	-0.16	-0.16	-0.19	-0.08	0.26	0.34	-0.17	-0.06	0.10	-0.24	-0.31	-0.34		0.23	0.32	0.00
0.40	-0.31	0.24	0.00	0.05	0.01	-0.21	0.22	0.51	0.12	0.29	0.10	0.18	-0.16	-0.19	-0.34	0.50		-0.07	0.00
0.48	-0.36	-0.25	0.10	-0.01	-0.06	0.08	-0.05	0.19	0.13	-0.08	-0.11	-0.11	-0.29	-0.45	0.19	-0.08	-0.01		0.00
-0.14	0.11	0.13	0.16	0.35	0.27	-0.07	0.03	0.05	-0.46	-0.13	-0.01	0.13	-0.03	-0.03	-0.02	-0.04	-0.11	0.05	

Fresno scores are above diagonal, N=11 (2nd grade), N=10 (3rd grade). Youngstown scores are below diagonal, N=11 (2nd grade), N=22 (3rd grade).

PRETEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Sesame Street
23. Attitude to The Electric Company
24. Attitude to Reading Performance
25. Job Satisfaction
26. Number in class needing remedial help
27. Number of children in class
28. Years of Education Completed
29. Years of Teaching Experience

POSTTEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Reading Performance
23. Hours per week class watches TV
24. Number in class needing remedial help
25. Number of children in class
26. The Electric Company Viewing Index
27. Usefulness of The Electric Company with reading difficulties
28. Usefulness of The Electric Company in teaching reading skills
29. Appropriateness of The Electric Company for class

Time taken from other subjects in order to watch The Electric Company:

30. Regular Reading
31. Language Arts
32. Other Academic Subjects
33. Physical Education
34. Lunch
35. Art or Music
36. Other

TABLE I-85

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with
Posttest CE Teacher Questionnaire Scales and Indices in Fresno, Grade 2 (N=11)

PRETEST

POSTTEST	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
1.	0.28	-0.03	0.08	0.19	0.00	0.31	-0.39	-0.02	0.68	0.39	0.14	0.17	0.03	0.39	0.51	-0.35	-0.78	0.00	0.45	0.42	0.64	0.35	0.68	-0.47	0.13	0.63	0.40	-0.72	0.15
2.	0.42	0.70	-0.21	0.78	0.06	0.32	-0.70	0.21	0.24	0.07	-0.22	-0.23	-0.21	-0.08	0.03	-0.20	-0.06	0.48	0.15	-0.03	0.34	0.17	0.30	-0.04	-0.29	0.27	0.72	0.04	0.04
3.	-0.21	-0.35	0.03	-0.22	0.18	0.05	0.12	-0.13	-0.23	0.27	0.22	0.36	0.04	0.43	0.31	-0.05	-0.35	-0.10	0.29	0.31	-0.04	0.18	0.21	-0.32	-0.00	-0.07	-0.16	-0.68	-0.21
4.	0.58	0.30	-0.15	0.44	0.28	-0.04	-0.22	-0.47	0.51	0.71	-0.04	0.31	0.23	0.46	0.71	0.43	-0.80	-0.44	0.43	0.67	0.29	0.50	0.65	-0.06	-0.49	0.33	0.49	-0.43	-0.44
5.	0.57	0.49	-0.13	0.50	0.30	0.31	-0.70	-0.06	0.24	0.40	0.11	-0.42	-0.32	-0.23	0.47	-0.41	-0.25	0.16	0.22	0.15	0.28	0.21	0.24	-0.14	-0.42	0.34	0.62	-0.23	0.17
6.	0.21	-0.04	-0.16	0.04	0.62	0.22	-0.34	-0.22	0.14	0.74	-0.05	0.21	0.11	0.26	0.59	0.36	-0.58	-0.23	0.60	0.20	0.42	0.65	0.64	0.13	-0.38	0.07	0.38	0.11	-0.64
7.	-0.43	-0.35	0.15	-0.54	-0.36	-0.45	0.76	0.02	-0.35	-0.61	-0.01	-0.02	0.13	-0.23	-0.61	0.25	0.65	-0.21	-0.55	-0.32	-0.56	-0.53	-0.73	0.24	0.33	-0.39	-0.73	0.48	0.16
8.	-0.18	0.13	0.17	0.14	-0.49	0.24	-0.22	0.49	0.02	-0.46	0.06	-0.30	-0.25	-0.26	-0.32	-0.78	0.29	0.56	-0.36	-0.31	0.02	-0.45	-0.36	-0.28	0.48	0.11	-0.03	-0.29	0.78
9.	-0.09	-0.45	0.27	-0.34	-0.42	-0.37	0.39	0.61	0.65	-0.54	0.66	-0.09	-0.17	0.10	-0.50	-0.35	-0.33	0.00	-0.07	-0.12	0.50	0.17	0.29	-0.57	0.43	0.65	-0.30	-0.21	0.09
10.	0.24	-0.28	-0.03	-0.05	0.46	-0.41	0.11	-0.03	-0.09	-0.10	0.12	0.49	0.10	0.65	-0.08	0.58	-0.31	0.00	0.30	0.46	0.27	0.48	0.21	-0.61	-0.20	0.09	-0.27	-0.32	-0.39
11.	-0.18	-0.43	0.07	-0.34	-0.12	-0.35	0.42	0.52	0.35	-0.44	0.76	-0.13	-0.37	0.03	-0.52	-0.04	-0.29	0.00	0.18	-0.20	0.39	0.33	0.43	-0.56	0.05	0.56	-0.20	0.03	-0.35
12.	0.65	0.42	-0.02	0.76	0.26	-0.17	-0.50	0.00	0.58	0.26	0.05	0.18	0.19	0.22	0.23	0.31	-0.63	0.00	0.22	0.48	0.72	0.68	0.61	-0.09	-0.22	0.34	0.42	-0.39	-0.38
13.	0.36	0.11	0.09	0.34	0.57	-0.23	-0.47	0.13	-0.06	0.48	0.22	0.20	0.28	-0.03	0.38	0.27	-0.54	0.00	-0.01	0.28	0.58	0.90	0.36	0.27	-0.19	-0.36	0.04	-0.16	-0.64
14.	-0.14	-0.25	0.20	-0.26	0.08	0.51	-0.44	-0.04	-0.03	0.59	-0.09	0.04	0.20	-0.10	0.71	-0.72	-0.28	0.00	0.00	0.08	0.16	0.04	0.00	0.27	0.35	-0.27	0.05	-0.44	0.32
15.	0.04	-0.41	0.03	-0.32	0.69	0.14	-0.31	-0.19	-0.45	0.50	0.01	0.34	0.12	0.36	0.57	-0.02	-0.31	0.00	0.31	0.34	0.07	0.32	0.04	-0.20	-0.13	-0.35	-0.17	-0.50	-0.18
16.	-0.01	0.47	0.02	0.35	-0.21	0.32	-0.31	-0.19	-0.11	0.33	-0.50	-0.14	0.29	-0.42	0.33	-0.19	0.27	0.00	-0.37	-0.12	-0.25	-0.27	-0.30	0.81	0.13	-0.48	0.25	0.19	0.27
17.	-0.27	0.56	-0.33	0.28	-0.23	0.08	0.29	-0.23	-0.45	-0.19	-0.34	-0.35	-0.20	-0.43	-0.40	0.46	0.78	0.00	-0.20	-0.50	-0.74	-0.48	-0.35	0.62	-0.39	-0.33	0.22	0.86	-0.18
18.	0.08	-0.06	0.12	-0.17	-0.34	0.27	-0.06	-0.21	0.21	-0.08	-0.38	0.00	0.13	0.10	0.18	-0.54	0.17	0.00	-0.14	0.13	-0.21	-0.63	-0.40	-0.18	0.40	0.18	-0.04	-0.36	0.93
19.	0.53	-0.00	0.23	0.19	0.30	-0.38	-0.14	-0.33	0.60	0.36	0.13	0.38	0.45	0.30	0.36	0.43	-0.76	-0.42	0.30	0.48	0.65	0.76	0.72	-0.07	-0.15	0.33	0.16	-0.31	-0.50
20.	0.20	-0.08	-0.31	-0.00	-0.32	0.15	0.31	-0.24	0.66	0.53	-0.27	0.43	0.28	0.65	0.58	0.26	-0.65	-0.48	0.11	0.74	0.19	0.09	0.38	0.13	0.18	0.25	0.14	-0.59	-0.02
21.	0.40	-0.61	0.18	-0.47	0.17	-0.31	0.17	0.01	0.57	0.11	0.53	0.20	0.10	0.49	0.20	-0.06	-0.73	-0.36	0.09	0.48	0.61	0.41	0.24	-0.59	0.29	0.45	-0.39	-0.65	0.13
22.	-0.31	0.10	-0.46	-0.15	0.02	0.44	0.06	0.15	-0.78	0.29	-0.17	-0.44	-0.37	-0.48	0.15	-0.19	0.58	0.16	-0.35	-0.22	-0.58	-0.40	-0.58	0.74	-0.12	-0.73	-0.03	0.36	0.01
23.	-0.17	-0.40	0.78	-0.33	-0.18	-0.33	0.11	-0.27	0.10	-0.28	-0.31	0.48	0.70	0.16	-0.05	-0.02	0.07	-0.19	-0.18	-0.08	-0.07	-0.27	-0.42	-0.18	0.62	-0.11	-0.51	-0.17	0.57
24.	0.19	-0.15	-0.04	-0.06	0.09	-0.14	0.07	0.04	0.63	-0.13	0.60	-0.15	-0.33	0.16	-0.15	0.08	-0.48	-0.18	0.49	0.03	0.47	0.36	0.66	-0.65	-0.22	0.87	0.19	0.03	-0.26
25.	0.10	0.28	0.23	0.45	0.22	0.23	-0.58	-0.24	0.61	0.36	0.04	0.07	-0.05	0.27	0.39	-0.29	-0.67	0.21	0.69	-0.06	0.24	0.44	0.67	-0.47	-0.35	0.57	0.65	-0.04	-0.11
26.	-0.43	-0.01	0.00	0.03	-0.75	0.11	0.38	0.15	0.34	-0.20	-0.04	0.06	0.07	0.02	-0.26	-0.09	-0.02	0.01	-0.15	-0.05	0.01	-0.18	0.21	0.22	0.43	0.15	0.05	-0.02	0.03
27.	0.11	-0.31	0.24	-0.12	0.24	0.25	-0.29	-0.29	0.63	0.60	0.23	0.27	0.18	0.38	0.68	-0.14	-0.89	-0.33	0.69	0.32	0.58	0.50	0.81	-0.40	0.04	0.59	0.31	-0.47	-0.10
28.	0.11	0.06	-0.11	0.16	0.34	0.58	-0.47	-0.37	0.43	0.84	-0.13	0.09	-0.01	0.30	0.79	-0.02	-0.65	-0.24	0.83	0.22	0.31	0.33	0.81	-0.10	-0.33	0.48	0.73	-0.11	-0.21
29.	-0.60	-0.35	0.04	-0.29	-0.25	0.27	0.23	0.10	-0.32	0.19	0.12	0.17	0.01	0.10	0.16	-0.34	-0.07	0.07	-0.05	0.04	-0.18	-0.10	-0.00	0.13	0.36	-0.33	-0.21	-0.38	-0.03
30.	0.71	0.26	0.00	0.25	-0.02	-0.03	-0.23	-0.30	0.64	0.05	-0.46	0.12	0.27	0.27	0.2	0.16	-0.17	-0.21	0.07	0.38	0.20	-0.16	0.00	-0.20	-0.00	0.49	0.26	-0.29	0.53
31.	-0.06	0.10	-0.28	-0.14	-0.05	-0.12	0.44	-0.35	-0.25	-0.24	0.05	-0.37	-0.36	-0.20	-0.27	0.32	0.54	-0.34	0.06	-0.14	-0.73	-0.54	-0.30	-0.01	-0.51	0.14	0.02	0.53	-0.03
32.	-0.46	-0.21	0.11	-0.02	0.00	0.27	-0.23	0.52	-0.41	-0.12	-0.06	0.28	-0.01	0.24	-0.13	-0.40	0.01	0.64	-0.02	-0.18	0.20	0.10	-0.05	-0.22	0.43	-0.37	-0.20	-0.36	0.06
33.	-0.03	-0.36	0.33	-0.29	-0.15	-0.65	0.44	0.16	0.21	-0.35	0.80	0.02	0.08	-0.15	-0.33	0.01	-0.30	-0.22	-0.32	0.06	0.33	0.43	0.09	-0.14	0.25	0.05	-0.54	-0.21	-0.26
34.	-0.11	-0.03	-0.10	-0.08	0.41	0.64	-0.47	-0.18	-0.09	0.86	0.02	-0.18	-0.09	-0.21	0.75	-0.22	-0.31	-0.13	0.42	-0.05	0.11	0.26	0.36	0.43	-0.23	-0.14	0.45	0.08	-0.24
35.	0.32	0.29	0.15	0.27	-0.04	-0.17	-0.24	0.05	0.29	0.17	0.13	-0.22	0.17	-0.47	0.12	-0.04	-0.17	-0.07	-0.35	-0.01	0.54	0.57	0.10	0.55	0.02	-0.12	0.14	0.14	-0.13
36.	-0.22	-0.38	-0.10	-0.22	0.06	0.15	0.23	-0.18	0.08	0.13	-0.26	0.60	0.19	0.80	0.15	0.31	-0.31	-0.13	0.55	0.32	0.00	0.00	0.36	-0.46	0.10	0.22	-0.05	-0.31	-0.16

PRETEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Sesame Street
23. Attitude to The Electric Company
24. Attitude to Reading Performance
25. Job Satisfaction
26. Number in class needing remedial help
27. Number of children in class
28. Years of Education Completed
29. Years of Teaching Experience

POSTTEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Reading Performance
23. Hours per week class watches TV
24. Number in class needing remedial help
25. Number of children in class
26. The Electric Company Viewing Index
27. Usefulness of The Electric Company with reading difficulties
28. Usefulness of The Electric Company in teaching reading skills
29. Appropriateness of The Electric Company for class

Time taken from other subjects in order to watch The Electric Company:

30. Regular Reading
31. Language Arts
32. Other Academic Subjects
33. Physical Education
34. Lunch
35. Art or Music
36. Other

TABLE I-86

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with Posttest CE Teacher Questionnaire Scales and Indices in Youngstown, Grade 2 (N=11)

PRETEST

POSTTEST	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
1.	0.19	0.21	-0.11	0.13	0.25	-0.11	-0.21	0.04	-0.47	-0.65	-0.38	0.04	-0.39	-0.33	0.02	-0.11	0.55	-0.12	0.32	-0.07	-0.22	0.24	-0.08	0.13	-0.16	0.38	0.70	0.07	-0.05
2.	-0.50	0.55	0.61	0.44	-0.06	-0.30	-0.04	-0.08	0.07	-0.65	0.37	0.32	-0.39	-0.38	-0.52	-0.18	-0.10	0.32	0.19	0.23	-0.36	0.01	-0.05	0.33	0.06	0.08	0.09	0.22	-0.43
3.	-0.61	0.57	0.65	0.48	0.39	-0.44	-0.17	0.15	-0.04	-0.80	0.30	0.06	-0.27	-0.57	-0.66	-0.42	0.25	0.13	0.21	0.22	-0.67	0.22	0.15	0.24	0.07	0.03	0.43	-0.18	-0.17
4.	-0.31	0.49	0.59	0.58	-0.33	-0.21	-0.09	-0.23	0.00	-0.58	0.51	0.05	-0.29	-0.21	-0.59	-0.14	-0.11	0.59	0.13	0.39	-0.33	0.10	-0.14	0.18	0.26	-0.00	-0.19	0.26	-0.25
5.	0.59	-0.71	-0.27	-0.52	-0.49	0.17	0.09	0.08	0.04	0.07	-0.30	0.13	-0.12	0.62	0.40	-0.00	-0.02	-0.28	0.23	0.33	0.23	0.07	-0.14	0.21	0.65	-0.20	-0.15	0.22	0.24
6.	0.01	0.06	0.26	0.34	-0.58	-0.43	0.42	-0.46	-0.35	-0.29	0.30	-0.25	-0.49	0.57	0.37	0.35	0.01	-0.22	0.57	-0.22	0.08	0.20	0.17	-0.07	0.21	0.16	0.12	0.12	-0.65
7.	0.25	-0.39	-0.51	-0.45	0.25	0.49	-0.11	0.16	0.22	0.74	-0.47	0.05	0.39	0.14	0.17	0.20	-0.12	-0.05	-0.53	-0.04	0.35	0.06	0.02	-0.29	-0.21	-0.47	-0.34	0.04	0.38
8.	0.39	-0.38	-0.58	-0.38	-0.15	0.24	0.23	-0.07	0.00	0.80	-0.06	-0.25	0.43	0.31	0.67	0.26	-0.18	-0.25	-0.16	-0.50	0.55	-0.49	-0.11	-0.24	-0.30	0.42	-0.19	-0.23	0.18
9.	0.02	0.01	0.25	0.09	-0.33	-0.12	0.32	-0.63	0.42	0.43	0.65	-0.08	0.45	0.62	0.31	0.32	-0.66	-0.35	0.29	-0.16	0.60	-0.46	-0.28	-0.52	0.01	0.02	-0.52	-0.45	-0.28
10.	-0.21	0.22	0.20	0.12	0.12	0.37	-0.31	-0.07	0.60	0.31	0.32	0.02	0.57	-0.43	-0.20	0.17	-0.49	0.38	-0.61	-0.10	0.25	-0.23	-0.06	-0.11	0.04	0.03	-0.54	-0.36	0.10
11.	-0.37	0.04	0.38	-0.03	0.02	-0.71	0.39	0.20	-0.01	-0.42	0.36	0.11	-0.21	-0.03	-0.18	-0.64	0.13	-0.36	0.56	0.14	-0.49	-0.20	-0.07	0.30	0.10	0.27	0.32	-0.18	-0.39
12.	-0.22	-0.07	-0.00	-0.26	-0.08	-0.29	0.46	0.05	0.36	0.51	0.47	0.15	0.43	0.02	-0.01	-0.43	-0.41	-0.12	0.03	-0.08	0.10	-0.85	-0.38	-0.02	-0.33	0.30	-0.35	-0.20	0.11
13.	-0.40	0.18	0.37	0.10	0.11	0.17	-0.06	-0.16	0.55	0.09	-0.05	0.33	0.04	-0.13	-0.12	0.48	-0.42	0.11	-0.50	-0.12	0.22	0.40	0.19	-0.16	0.08	-0.70	-0.44	0.08	-0.49
14.	-0.02	-0.01	0.32	0.25	-0.71	-0.31	0.43	-0.49	0.09	-0.09	0.30	-0.11	-0.39	0.37	0.16	0.30	-0.23	0.13	0.07	-0.12	0.09	0.33	0.00	-0.20	0.34	-0.16	-0.52	0.21	-0.52
15.	0.27	-0.24	-0.18	-0.42	-0.27	0.02	0.31	-0.22	0.47	0.57	0.39	0.29	0.64	0.36	0.32	-0.18	-0.61	-0.34	0.26	-0.01	0.57	-0.91	-0.62	-0.13	-0.17	0.41	-0.43	-0.26	0.16
16.	-0.11	0.58	0.19	0.35	0.56	-0.03	-0.21	-0.45	0.01	-0.33	-0.09	0.24	0.06	-0.15	-0.03	0.34	-0.01	-0.35	0.29	-0.23	0.30	0.08	-0.17	-0.47	-0.56	-0.05	0.39	-0.28	-0.46
17.	0.31	-0.18	-0.46	-0.04	0.11	0.33	-0.41	0.48	-0.63	-0.27	-0.73	-0.27	-0.47	-0.32	-0.09	-0.03	0.73	0.43	-0.34	0.13	-0.67	0.66	0.39	0.34	0.15	-0.07	0.42	0.47	0.41
18.	0.03	-0.05	0.25	0.23	-0.24	0.25	-0.15	-0.32	-0.08	-0.03	0.09	-0.10	-0.09	0.76	0.18	0.70	-0.23	-0.15	0.26	0.19	0.32	0.32	0.38	-0.08	0.45	-0.51	0.00	0.13	-0.40
19.	0.37	-0.44	-0.38	-0.34	-0.59	-0.29	0.44	0.23	-0.33	-0.01	-0.13	0.00	-0.40	0.13	0.09	-0.56	0.28	0.16	0.18	0.19	-0.35	-0.19	-0.28	0.33	0.10	0.32	-0.09	0.50	0.32
20.	-0.10	-0.13	-0.18	-0.27	-0.04	-0.40	0.35	0.43	0.03	0.06	0.02	-0.01	-0.08	-0.59	-0.21	-0.81	0.25	0.24	-0.26	-0.08	-0.52	-0.24	-0.25	0.24	-0.19	0.43	-0.13	0.01	0.42
21.	-0.14	0.09	-0.32	-0.05	0.01	-0.18	0.17	0.31	-0.10	0.23	0.05	-0.12	0.04	-0.65	-0.33	-0.70	-0.37	0.50	-0.46	-0.19	-0.54	-0.32	-0.27	0.07	-0.44	0.49	-0.62	0.08	0.44
22.	-0.05	-0.15	-0.11	-0.20	-0.16	0.20	-0.24	0.67	-0.16	-0.27	-0.20	0.18	-0.22	-0.46	-0.26	-0.40	0.22	0.52	-0.26	0.34	-0.48	-0.04	0.19	0.91	0.37	0.31	0.19	0.48	0.31
23.	0.04	0.29	0.18	0.09	0.49	0.47	-0.51	-0.37	0.46	0.19	0.25	0.33	0.79	0.26	-0.20	0.27	-0.55	-0.28	0.24	0.36	0.61	-0.49	-0.32	-0.40	-0.20	-0.32	-0.07	-0.42	0.09
24.	-0.13	0.55	0.49	0.61	-0.01	-0.32	0.18	-0.88	0.27	0.04	0.77	-0.18	0.41	0.29	-0.07	0.24	-0.47	-0.21	0.40	-0.16	0.42	-0.44	-0.49	-0.86	-0.33	0.01	-0.35	-0.60	-0.43
25.	-0.24	0.20	0.01	0.29	0.27	-0.36	0.10	0.13	-0.71	-0.36	-0.14	-0.35	-0.48	0.05	0.03	0.03	0.57	-0.21	0.37	-0.20	-0.42	0.40	0.49	0.06	-0.26	0.13	0.79	0.07	-0.26
26.	-0.34	0.30	0.29	0.40	0.13	-0.25	0.05	-0.11	-0.20	-0.44	-0.28	-0.07	-0.62	-0.22	-0.18	0.28	0.32	0.15	-0.18	-0.19	-0.32	0.80	0.38	-0.16	-0.04	-0.42	0.14	0.25	-0.52
27.	0.20	-0.66	-0.39	-0.56	-0.43	-0.09	0.26	0.70	-0.14	0.14	-0.21	-0.10	-0.23	-0.14	0.06	-0.65	0.31	0.27	-0.26	0.17	-0.52	-0.08	0.04	0.66	0.44	0.28	-0.11	0.34	0.59
28.	0.44	-0.74	-0.65	-0.64	-0.46	0.29	0.08	0.64	-0.25	0.41	-0.35	-0.00	-0.06	0.20	0.15	-0.38	0.17	0.29	-0.21	0.34	-0.18	-0.21	0.02	0.64	0.31	0.12	-0.12	0.58	0.66
29.	0.20	-0.61	-0.32	-0.37	-0.70	-0.33	0.50	0.49	-0.41	0.03	-0.11	-0.24	-0.54	0.14	0.18	-0.52	0.38	0.22	0.01	0.08	-0.55	0.05	0.12	0.59	0.42	0.31	0.90	0.49	0.39
30.	-0.01	-0.15	0.22	0.12	-0.28	0.29	-0.13	-0.18	-0.02	0.03	-0.02	-0.06	-0.14	0.70	0.18	0.69	-0.23	-0.06	0.08	0.19	0.26	0.43	0.47	0.03	0.53	-0.61	-0.09	0.25	-0.38
31.	-0.09	-0.22	-0.19	-0.10	-0.19	-0.55	0.75	-0.08	-0.11	0.43	0.00	-0.36	-0.25	0.15	0.24	-0.13	0.16	-0.13	-0.16	-0.48	-0.16	0.60	0.10	-0.46	-0.35	-0.11	-0.31	-0.01	-0.09
32.	-0.22	0.07	-0.00	0.06	-0.32	0.10	0.06	0.20	0.03	0.02	-0.13	0.06	-0.30	-0.51	-0.05	0.14	-0.03	0.65	-0.66	-0.26	-0.17	0.29	0.24	0.39	0.07	0.13	-0.29	0.50	-0.24
33.	-0.25	0.44	0.31	0.47	0.42	-0.26	-0.34	0.18	-0.44	-0.75	0.10	-0.20	-0.30	-0.36	-0.62	-0.42	0.54	0.16	0.34	0.38	-0.66	0.22	0.16	0.15	0.00	0.03	0.63	-0.08	0.17
34.	0.36	-0.32	-0.30	-0.41	-0.14	0.25	-0.05	0.11	0.20	0.44	0.25	0.07	0.62	0.22	0.19	-0.29	-0.31	-0.15	0.18	0.20	0.32	-0.80	-0.39	0.16	0.05	0.43	-0.14	-0.25	0.53
35.	0.29	-0.00	-0.17	-0.27	0.23	-0.01	-0.03	-0.11	0.18	-0.23	-0.38	0.41	0.02	-0.29	0.32	-0.02	0.08	-0.44	0.13	-0.29	0.27	-0.14	-0.56	-0.09	-0.21	0.33	0.23	-0.25	-0.10
36.	-0.20	0.60	0.25	0.23	0.86	0.25	-0.50	-0.32	0.48	-0.03	0.09	0.42	0.62	-0.32	-0.49	0.05	-0.32	-0.15	0.01	0.19	0.32	-0.24	-0.38	-0.56	-0.58	-0.33	0.00	-0.44	0.04

PRETEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Sesame Street
23. Attitude to The Electric Company
24. Attitude to Reading Performance
25. Job Satisfaction
26. Number in class needing remedial help
27. Number of children in class
28. Years of Education Completed
29. Years of Teaching Experience

POSTTEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Reading Performance
23. Hours per week class watches TV
24. Number in class needing remedial help
25. Number of children in class
26. The Electric Company Viewing Index
27. Usefulness of The Electric Company with reading difficulties
28. Usefulness of The Electric Company in teaching reading skills
29. Appropriateness of The Electric Company for class

Time taken from other subjects in order to watch The Electric Company:

30. Regular Reading
31. Language Arts
32. Other Academic Subjects
33. Physical Education
34. Lunch
35. Art or Music
36. Other

TABLE I-87

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with
Posttest CE Teacher Questionnaire Scales and Indices in Fresno, Grade 3 (N=10)

PRETEST

POSTTEST	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
1.	0.28	0.34	-0.04	0.06	-0.25	0.71	-0.38	-0.64	0.70	-0.05	-0.34	0.54	-0.25	-0.37	0.27	-0.31	-0.14	0.00	-0.34	-0.78	-0.59	-0.90	-0.61	-0.74	0.33	0.85	0.06	0.00	0.73
2.	0.25	0.59	-0.42	0.65	-0.27	0.17	-0.02	-0.79	0.48	-0.18	-0.08	0.70	-0.33	-0.35	0.41	-0.12	-0.51	0.00	0.22	-0.07	-0.44	-0.27	0.07	-0.11	0.22	0.10	-0.26	0.14	0.40
3.	0.39	-0.42	0.60	-0.30	-0.09	-0.08	-0.27	0.51	-0.45	0.18	0.42	-0.35	0.40	0.41	-0.61	0.14	-0.27	0.00	0.02	-0.01	0.30	0.28	-0.25	0.15	-0.32	-0.27	-0.16	0.18	-0.56
4.	-0.07	0.72	-0.73	0.89	-0.22	0.12	-0.03	-0.80	0.15	-0.36	0.08	0.63	-0.30	-0.26	0.54	0.03	-0.46	0.00	0.19	0.04	-0.27	-0.28	0.28	-0.23	0.37	0.09	0.08	0.06	0.23
5.	-0.37	0.25	-0.26	0.14	0.01	-0.25	0.49	-0.17	0.48	-0.33	-0.81	0.42	0.37	-0.26	0.87	-0.41	0.49	0.00	0.04	0.12	-0.49	-0.06	-0.15	0.09	0.32	-0.07	0.51	-0.30	0.53
6.	-0.37	0.27	-0.29	-0.09	0.10	-0.16	0.25	0.11	-0.71	0.72	0.10	-0.71	-0.47	0.10	-0.03	0.81	0.10	0.00	-0.52	0.40	0.13	0.37	0.61	-0.01	0.30	-0.32	0.37	-0.43	-0.09
7.	-0.11	-0.58	0.09	-0.04	0.34	-0.55	0.22	0.57	0.19	-0.66	0.32	0.13	0.19	0.04	-0.32	-0.51	0.21	0.00	0.67	0.50	0.64	0.59	0.46	0.69	-0.71	-0.42	-0.35	0.23	-0.65
8.	0.23	0.05	0.27	-0.40	-0.13	0.63	-0.35	-0.21	0.18	0.59	-0.37	-0.39	-0.07	0.03	-0.32	0.03	0.32	0.00	-0.59	-0.72	-0.40	-0.75	-0.70	-0.60	0.32	0.65	0.06	-0.11	0.54
9.	0.16	-0.82	0.50	-0.43	0.17	0.10	-0.21	0.55	0.49	-0.34	0.07	0.03	0.13	-0.16	-0.31	-0.63	0.37	0.00	0.04	-0.13	0.30	-0.10	-0.32	0.57	-0.25	-0.02	-0.61	-0.11	0.04
10.	0.38	-0.31	0.20	-0.33	0.34	0.03	-0.30	0.30	-0.46	0.00	0.54	-0.30	0.00	0.57	-0.92	0.26	-0.24	0.00	0.27	-0.33	0.72	-0.42	0.00	0.02	-0.83	0.33	-0.31	0.38	-0.84
11.	0.33	0.06	-0.08	0.16	-0.20	0.66	-0.59	-0.13	-0.51	0.51	0.83	-0.49	-0.81	-0.09	-0.49	0.60	-0.46	0.00	-0.17	-0.42	0.28	-0.43	0.52	-0.64	-0.17	0.51	0.02	0.17	-0.57
12.	0.00	-0.83	0.39	-0.27	0.18	0.00	-0.34	0.72	0.00	-0.42	0.42	-0.17	0.24	0.06	-0.41	-0.40	0.27	0.00	0.13	0.00	0.62	0.07	-0.33	0.46	-0.30	-0.19	-0.22	0.00	-0.50
13.	-0.26	-0.43	0.37	-0.78	0.40	-0.51	0.30	0.82	-0.57	0.37	-0.12	-0.75	0.35	0.53	-0.46	0.32	0.48	0.00	-0.33	0.42	0.43	1.00	0.00	0.42	-0.22	-0.53	0.15	-0.26	-0.34
14.	-0.05	0.32	-0.17	-0.02	0.39	-0.71	0.50	-0.17	-0.01	-0.51	-0.49	0.50	0.79	0.67	-0.01	-0.11	-0.07	0.00	-0.04	0.57	0.05	0.10	-0.39	0.12	0.15	-0.32	-0.27	-0.28	0.26
15.	-0.25	0.35	-0.28	0.32	0.10	-0.55	0.48	-0.34	0.45	-0.72	-0.65	0.80	0.71	0.12	0.60	-0.49	0.07	0.00	-0.08	0.59	-0.33	0.10	-0.45	0.09	0.26	-0.22	0.11	-0.56	0.37
16.	-0.65	0.32	-0.45	-0.12	0.63	-0.93	0.75	0.09	-0.40	-0.37	-0.52	0.05	0.64	0.71	0.12	0.19	0.36	0.00	-0.31	0.94	0.26	0.35	0.00	0.12	0.19	-0.44	0.30	-0.65	-0.03
17.	-0.20	0.57	-0.32	0.52	-0.48	0.19	0.12	-0.55	0.23	0.22	-0.29	0.23	-0.26	-0.54	0.80	0.05	-0.10	0.00	0.04	-0.10	-0.74	0.12	0.16	-0.28	0.55	-0.01	0.45	0.15	0.54
18.	0.17	-0.41	0.53	-0.76	0.22	-0.11	0.26	0.37	0.27	0.32	-0.47	-0.19	0.09	0.02	-0.25	-0.21	0.41	0.00	0.06	-0.28	-0.08	0.17	0.00	0.60	-0.41	-0.02	-0.53	0.17	0.36
19.	-0.12	-0.30	0.17	-0.68	0.50	-0.48	0.44	0.59	-0.56	0.76	-0.02	-0.88	-0.29	0.44	-0.68	0.63	0.33	0.00	0.36	0.23	0.51	0.55	0.77	0.47	-0.72	-0.26	[illegible]	0.49	-0.48
20.	-0.24	0.38	-0.58	0.35	0.36	-0.62	0.59	-0.23	0.08	-0.37	-0.30	0.58	-0.11	0.20	0.29	0.14	-0.20	0.00	0.02	0.77	0.21	0.52	0.71	0.27	-0.30	-0.29	-0.08	-0.52	-0.29
21.	0.00	-0.52	0.00	0.00	0.31	-0.41	0.09	0.51	-0.13	-0.20	0.74	-0.23	-0.33	0.07	-0.68	-0.05	0.00	0.00	0.49	0.36	0.69	0.51	0.64	0.35	-0.85	-0.10	-0.05	0.24	-0.90
22.	-0.20	-0.48	0.11	-0.40	0.59	-0.77	0.57	0.62	0.11	-0.27	-0.29	-0.12	0.32	0.44	-0.47	-0.24	0.56	0.00	0.61	0.62	0.63	0.73	0.64	0.88	-0.73	-0.58	-0.53	0.20	-0.41
23.	0.38	-0.57	0.71	-0.09	-0.27	-0.28	0.00	0.40	0.58	-0.28	-0.17	0.41	0.71	-0.15	0.07	-0.73	-0.11	0.00	0.48	0.07	-0.17	0.39	-0.35	0.50	-0.50	-0.33	-0.26	0.29	-0.20
24.	0.38	0.30	-0.16	0.23	-0.26	0.84	-0.62	-0.66	0.27	-0.08	0.43	0.31	-0.66	-0.30	-0.15	-0.01	-0.47	0.00	-0.21	-0.82	-0.30	-0.92	-0.43	-0.83	0.10	0.97	0.07	0.14	0.18
25.	-0.64	0.33	-0.53	-0.09	0.54	-0.54	0.53	0.16	-0.85	0.11	-0.10	-0.44	0.11	0.64	-0.09	0.69	0.23	0.00	0.11	0.37	0.50	0.29	0.49	0.07	-0.12	-0.23	0.52	0.14	-0.47
26.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	-0.40	0.02	-0.19	0.00	-0.00	-0.52	0.29	0.19	0.97	-0.29
27.	-0.08	-0.44	0.17	-0.71	0.60	-0.43	0.33	0.65	-0.53	0.51	0.15	-0.81	-0.26	0.49	-0.84	0.50	0.34	0.00	0.36	0.23	0.72	0.58	0.68	0.52	-0.53	-0.32	-0.50	0.55	-0.34
28.	-0.15	-0.34	0.01	-0.56	0.66	-0.50	0.38	0.58	-0.63	0.41	0.21	-0.76	-0.30	0.57	-0.85	0.58	0.29	0.00	0.30	0.43	0.84	0.75	0.75	0.54	-0.41	-0.42	-0.53	0.33	-0.34
29.	0.06	-0.36	0.10	-0.47	0.44	-0.24	0.10	0.50	-0.61	0.52	0.49	-0.77	-0.50	0.37	-0.88	0.59	0.05	0.00	0.39	0.14	0.71	0.44	0.67	0.36	-0.57	-0.19	-0.44	0.60	-0.51
30.	0.38	0.62	-0.31	0.83	-0.63	0.44	-0.34	-0.84	0.34	-0.02	0.18	0.59	-0.40	-0.50	0.46	-0.03	-0.71	0.00	0.19	-0.33	-0.59	-0.48	0.00	-0.49	-0.11	0.50	0.32	0.33	-0.08
31.	-0.28	0.83	-0.61	0.49	0.00	-0.24	0.46	-0.68	0.16	-0.23	-0.61	0.59	0.21	0.06	0.68	0.05	-0.13	0.00	-0.12	0.24	-0.46	-0.07	0.05	-0.21	0.24	0.05	0.41	-0.44	0.31
32.	-0.35	-0.57	0.27	-0.82	0.62	-0.30	0.24	0.74	-0.35	-0.01	-0.15	-0.58	0.36	0.52	-0.50	0.05	0.70	0.00	-0.36	0.24	0.53	0.27	-0.11	0.32	0.22	-0.35	-0.30	-0.54	0.15
33.	0.25	-0.88	0.52	-0.20	-0.02	0.09	-0.40	0.62	0.20	-0.21	0.58	-0.17	-0.09	-0.25	-0.45	-0.44	0.09	0.00	0.33	-0.04	0.46	0.18	0.00	0.36	-0.44	-0.10	-0.43	0.25	-0.46
34.	0.14	-0.43	0.52	-0.75	0.24	-0.18	0.29	0.40	0.37	0.32	-0.47	-0.19	0.09	0.02	-0.25	-0.21	0.41	0.00	0.09	-0.02	-0.02	0.19	0.00	0.44	-0.41	-0.10	-0.53	0.14	0.28
35.	0.09	-0.50	0.41	-0.38	-0.04	0.07	-0.29	0.63	-0.64	0.52	0.59	-0.83	-0.20	0.13	-0.58	0.42	0.03	0.00	0.19	-0.16	0.40	0.19	0.13	0.16	-0.04	-0.22	-0.07	0.56	-0.29
36.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PRETEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Sesame Street
23. Attitude to The Electric Company
24. Attitude to Reading Performance
25. Job Satisfaction
26. Number in class needing remedial help
27. Number of children in class
28. Years of Education Completed
29. Years of Teaching Experience

POSTTEST TEACHER QUESTIONNAIRE ITEMS AND SCALES

Time spent per week in classroom activities:

1. Miscellaneous
2. Science
3. Arithmetic
4. Social Studies
5. Physical Education
6. Language
7. Reading
8. Other

Time spent per week in reading activities:

9. Blending
10. Letter Groups
11. Sight Words
12. Spelling Patterns
13. Morphemes
14. Syntax
15. Punctuation
16. Context Clues
17. Comprehension
18. Other

19. Attitude to Educational TV
20. Attitude to Phonics
21. Attitude to Linguistics
22. Attitude to Reading Performance
23. Hours per week class watches TV
24. Number in class needing remedial help
25. Number of children in class
26. The Electric Company Viewing Index
27. Usefulness of The Electric Company with reading difficulties
28. Usefulness of The Electric Company in teaching reading skills
29. Appropriateness of The Electric Company for class

Time taken from other subjects in order to watch The Electric Company:

30. Regular Reading
31. Language Arts
32. Other Academic Subjects
33. Physical Education
34. Lunch
35. Art or Music
36. Other

TABLE I-88

Intercorrelations of Pretest CE Teacher Questionnaire Scales and Indices with
Posttest CE Teacher Questionnaire Scales and Indices in Youngstown, Grade 3 (N=22)

		PRETEST																												
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.
	1.	0.32	0.12	0.25	-0.18	0.33	-0.41	0.02	-0.22	0.06	0.31	0.19	0.01	-0.09	0.36	0.26	0.08	-0.40	-0.08	0.15	0.01	-0.15	-0.14	-0.31	-0.42	0.11	-0.22	-0.12	0.18	-0.10
	2.	0.05	0.64	0.26	0.53	0.26	-0.10	-0.47	-0.63	-0.00	-0.39	-0.19	-0.20	0.31	0.11	0.38	0.45	-0.12	0.06	0.13	-0.28	-0.10	0.31	0.44	-0.07	-0.18	-0.00	-0.21	0.22	-0.04
	3.	0.07	0.19	0.36	0.24	-0.08	-0.16	-0.33	-0.07	-0.23	-0.59	-0.03	0.24	0.18	-0.14	-0.15	0.03	0.19	0.13	0.08	-0.05	-0.10	0.16	0.11	0.50	0.02	-0.03	0.14	-0.02	-0.33
	4.	0.10	0.34	0.40	0.63	0.03	-0.21	-0.43	-0.40	-0.03	-0.35	-0.07	0.09	0.15	0.14	0.15	0.36	-0.16	-0.01	0.30	-0.34	-0.12	0.01	0.31	-0.01	-0.08	0.02	0.03	0.17	-0.11
	5.	0.05	-0.04	0.07	0.01	0.17	-0.18	0.13	-0.17	-0.02	0.24	-0.03	-0.05	0.02	0.28	0.24	0.42	-0.39	-0.05	0.27	-0.02	0.17	-0.37	0.12	-0.11	0.13	-0.41	-0.07	0.29	0.31
	6.	-0.15	-0.25	-0.39	-0.20	-0.04	0.36	0.24	0.10	0.37	0.42	-0.08	-0.41	-0.13	-0.07	0.21	-0.09	-0.02	-0.01	-0.30	-0.05	-0.07	0.08	0.24	-0.37	-0.17	0.21	-0.22	-0.11	0.31
	7.	-0.11	-0.43	-0.42	-0.31	-0.16	0.17	0.39	0.50	-0.03	0.35	-0.01	-0.00	-0.28	-0.26	-0.41	-0.52	0.44	-0.15	-0.31	0.24	0.22	-0.22	-0.40	0.6[illegible]	0.05	0.21	0.43	-0.07	0.20
	8.	-0.09	-0.03	0.08	-0.42	-0.16	0.10	0.05	0.20	-0.15	-0.24	0.30	0.40	0.15	0.05	-0.14	0.01	-0.28	0.25	0.23	0.25	-0.01	0.2[illegible]	-0.11	0.34	0.19	-0.30	-0.50	-0.35	-0.46
	9.	-0.02	-0.33	-0.31	0.03	-0.06	0.27	0.19	0.01	0.60	0.48	0.08	-0.52	0.07	0.18	0.12	-0.30	-0.06	-0.20	-0.38	-0.29	-0.29	-0.16	0.02	-0.44	-0.36	0.38	0.06	0.07	0.25
	10.	0.14	-0.26	-0.01	0.16	-0.10	0.16	0.08	-0.31	0.58	0.54	0.17	-0.16	0.06	0.14	0.01	-0.48	-0.21	-0.13	-0.22	-0.24	-0.29	-0.18	0.20	-0.52	-0.51	0.30	-0.03	0.11	0.02
	11.	0.12	-0.25	-0.26	0.06	-0.18	0.25	-0.14	0.37	0.21	-0.01	0.24	-0.08	0.47	0.15	-0.05	-0.09	-0.22	-0.05	-0.26	0.09	0.03	-0.11	0.28	0.17	0.11	-0.18	0.10	0.04	-0.13
	12.	0.24	0.11	0.39	0.06	-0.10	-0.13	-0.18	-0.31	-0.30	-0.08	-0.18	0.73	-0.25	-0.24	-0.13	-0.08	-0.01	0.11	0.33	0.23	0.08	0.24	0.54	-0.03	0.21	-0.17	-0.20	-0.24	-0.41
	13.	0.16	-0.43	-0.45	-0.21	-0.09	0.27	0.18	0.35	-0.03	0.09	0.07	-0.40	0.20	0.33	0.44	0.40	-0.39	0.29	-0.03	0.07	0.07	-0.11	0.22	0.13	0.17	-0.25	-0.20	-0.11	0.13
POSTTEST	14.	-0.00	0.08	-0.19	0.10	0.31	0.09	-0.07	-0.14	-0.00	-0.12	-0.03	-0.33	0.39	0.24	0.29	0.16	-0.11	0.05	-0.01	0.18	-0.01	0.01	0.46	0.01	-0.16	-0.14	-0.02	-0.05	0.13
	15.	0.17	0.06	-0.07	-0.03	0.16	-0.03	-0.09	-0.00	-0.22	-0.19	-0.23	-0.51	-0.06	0.15	0.70	0.69	-0.14	0.35	0.10	-0.05	0.07	0.07	0.35	0.09	0.02	-0.26	-0.12	0.01	0.25
	16.	-0.23	0.64	0.28	0.09	0.28	-0.32	-0.00	-0.47	0.08	-0.05	0.12	-0.13	0.16	0.14	0.00	0.10	-0.08	-0.12	-0.06	-0.14	0.08	-0.06	-0.23	-0.20	-0.10	0.05	0.03	0.54	0.11
	17.	-0.16	0.03	0.08	-0.01	-0.17	-0.19	0.11	0.25	-0.52	-0.22	-0.07	0.41	-0.17	-0.21	-0.23	0.12	0.24	-0.15	0.22	-0.00	0.13	-0.07	-0.46	0.40	0.39	-0.08	0.24	-0.04	-0.13
	18.	-0.03	-0.14	-0.11	-0.25	0.17	0.18	-0.05	0.17	0.30	-0.01	-0.10	-0.30	-0.34	-0.17	-0.12	-0.20	0.30	0.22	-0.10	0.07	-0.15	0.22	-0.21	-0.09	-0.33	0.29	-0.20	-0.32	0.25
	19.	0.15	0.09	-0.39	0.05	-0.17	0.35	-0.10	0.02	-0.11	0.15	-0.37	-0.19	-0.00	-0.22	0.28	0.13	0.15	0.00	-0.07	0.41	0.62	0.07	0.70	-0.24	0.15	0.01	0.09	-0.26	0.04
	20.	0.18	0.01	-0.21	-0.16	-0.16	0.19	-0.01	0.10	-0.35	0.08	-0.02	0.33	0.00	-0.09	-0.13	0.02	-0.03	0.03	0.25	0.10	0.09	0.25	0.14	-0.13	0.30	-0.18	0.01	-0.02	0.00
	21.	-0.23	-0.03	-0.18	0.01	-0.27	0.08	0.25	0.12	-0.14	0.30	-0.06	0.07	0.07	-0.50	-0.05	0.12	0.12	-0.49	-0.04	0.03	0.40	0.25	0.25	-0.16	0.19	-0.04	0.04	-0.25	-0.19
	22.	-0.30	0.10	0.21	0.25	0.04	0.12	-0.34	0.02	0.03	-0.72	0.23	0.04	0.48	0.16	-0.19	0.26	-0.10	0.09	0.18	-0.14	0.02	-0.03	0.15	0.69	0.04	-0.14	-0.00	0.15	0.02
	23.	-0.21	-0.25	-0.19	-0.11	-0.01	0.14	0.21	0.19	0.03	0.20	0.29	0.01	0.22	0.32	-0.03	0.10	-0.36	-0.13	0.13	0.11	0.16	-0.47	-0.04	0.06	0.10	-0.28	0.07	0.15	0.24
	24.	-0.04	0.35	0.59	0.16	-0.16	-0.72	0.32	-0.51	-0.22	-0.10	-0.07	0.27	-0.21	-0.02	-0.19	-0.48	0.42	-0.10	-0.11	-0.19	-0.17	0.14	-0.46	-0.27	-0.37	0.49	0.30	-0.10	-0.52
	25.	-0.12	0.03	0.39	0.14	-0.12	-0.47	0.26	-0.16	-0.26	-0.16	-0.03	0.07	-0.28	-0.18	-0.31	-0.33	0.58	-0.20	-0.02	-0.04	0.27	-0.27	-0.60	0.01	-0.02	0.51	0.88	-0.04	-0.08
	26.	-0.13	-0.19	-0.10	-0.22	0.06	-0.33	0.40	0.39	-0.21	0.15	-0.30	0.21	-0.41	-0.05	-0.22	0.05	0.26	-0.24	-0.10	0.09	0.07	-0.11	-0.46	0.16	0.35	-0.23	0.14	0.02	0.15
	27.	-0.23	0.03	0.18	0.32	-0.31	-0.06	0.05	-0.32	-0.09	-0.17	-0.13	0.07	-0.05	-0.07	-0.35	-0.32	0.48	-0.23	-0.02	-0.14	0.17	-0.16	-0.31	-0.08	-0.35	0.51	0.53	0.00	-0.15
	28.	-0.10	0.34	-0.08	0.18	-0.38	0.22	0.00	-0.26	-0.12	0.05	-0.41	0.07	-0.24	-0.41	-0.19	-0.25	0.52	-0.07	-0.15	-0.02	0.33	0.24	0.26	-0.26	-0.26	0.35	0.25	-0.01	0.00
	29.	0.01	0.22	0.12	0.37	-0.12	-0.05	-0.01	-0.44	-0.07	0.06	-0.18	0.13	-0.08	-0.15	-0.06	-0.25	-0.26	-0.26	0.27	0.06	0.39	-0.08	0.62	-0.34	-0.15	0.39	0.33	-0.29	-0.18
	30.	-0.19	-0.18	0.16	0.07	-0.01	-0.28	0.36	-0.04	0.21	0.06	0.16	-0.16	0.24	0.15	0.02	0.17	-0.18	-0.25	-0.04	-0.30	-0.21	-0.04	-0.08	-0.14	-0.01	0.08	-0.01	-0.12	-0.03
	31.	-0.01	0.29	0.08	0.11	0.05	0.27	-0.38	-0.29	-0.15	-0.47	-0.11	-0.27	0.31	0.17	0.07	0.54	-0.18	0.01	0.19	-0.09	0.03	0.15	0.20	0.38	-0.11	-0.22	-0.29	-0.06	-0.23
	32.	0.13	-0.19	-0.27	-0.35	-0.08	0.25	0.07	0.22	-0.00	0.34	-0.02	-0.00	-0.51	-0.19	-0.14	-0.36	0.23	0.26	-0.06	0.05	-0.16	0.21	-0.40	-0.16	-0.32	0.17	-0.14	-0.17	0.08
	33.	0.07	0.20	0.01	0.11	0.16	-0.17	-0.09	-0.02	-0.08	-0.14	-0.27	0.18	-0.04	0.06	-0.30	-0.00	0.12	0.13	0.04	0.35	0.32	-0.37	0.28	0.06	0.32	-0.21	0.31	0.40	0.42
	34.	0.08	0.22	-0.07	0.54	0.01	-0.19	-0.13	-0.04	-0.09	-0.21	-0.23	-0.06	0.21	0.02	-0.15	-0.21	0.38	-0.23	-0.25	0.10	0.05	-0.13	0.07	0.03	-0.05	0.26	0.57	0.01	-0.14
	35.	-0.01	-0.23	0.04	-0.11	-0.20	-0.01	0.10	0.23	0.09	0.37	0.38	0.44	-0.08	-0.20	-0.40	-0.35	-0.15	-0.13	-0.08	0.01	0.01	-0.04	-0.27	-0.11	0.32	0.05	0.02	0.09	-0.17
	36.	0.03	0.04	0.27	-0.05	0.28	-0.13	-0.14	-0.18	0.14	0.12	0.43	0.08	0.25	-0.33	-0.11	-0.10	-0.18	-0.10	0.13	0.19	0.18	0.18	0.32	-0.26	0.08	0.01	-0.11	-0.17	-0.13

TABLE I-89

Observation Record Indices of Experimental Classes in Fresno and Youngstown, Grade 2 in the First-Second Grade Study

	Maximum Possible Score	Fresno N=12		Youngstown N=13	
		Mean	SD	Mean	SD
Teacher references to show per 15 minute period	15	0.71	1.28	5.49	2.70
Average number of inattentive children per minute	---	0.02	0.02	0.01	0.01
Average number of absent children per minute	---	0.01	0.02	0.00	0.00
TV reception	1=very poor 5=excellent	3.86	0.35	4.79	0.21
Child participation	1=never 3=frequently	1.54	0.49	2.56	0.46

TABLE I-90

Observation Record Indices of Experimental Classes in Fresno and Youngstown, Grade 3 in the Second-Third Grade Study

	Maximum Possible Score	Fresno N=15 Mean	Fresno N=15 SD	Youngstown N-23 Mean	Youngstown N-23 SD
Teacher references to show per 15 minute period	15	0.74	1.08	4.61	3.66
Average number of inattentive children per minute	---	0.02	0.01	0.00	0.00
Average number of absent children per minute	---	0.01	0.01	0.00	0.00
TV reception	1=very poor 5=excellent	4.12	0.36	4.68	0.29
Child participation	1=never 3=frequently	1.56	0.43	2.39	0.42

TABLE I-91

Partial Correlations (given Pretest, Year 2) of Total Gains of CE Classrooms with Pretest-Posttest Teacher Questionnaire Indices and Observation Record Indices

		Gains Year 2			
		Fresno		Youngstown	
		Grade 2	Grade 3	Grade 2	Grade 3
PRETEST	Time spent in classroom activities (minutes per week):	(N=11)*	(N=10)*	(N=11)*	(N=22)*
	Miscellaneous	-.32	-.29	-.38	.40
	Science	-.22	.47	.03	-.02
	Arithmetic	-.27	-.69	.52	.45
	Social Studies	-.35	.24	.06	-.03
	Physical Education	-.42	.42	-.12	-.07
	Language	.10	-.56	-.03	-.30
	Reading	.50	.59	-.18	-.26
	Other	.07	-.31	.26	-.01
	Time spent in reading activities (minutes per week):				
	Blending	-.11	-.30	.24	-.35
	Letter Groups	.12	.08	-.47	-.55
	Sight Words	.36	-.13	-.06	.22
	Spelling	-.25	-.00	.28	.23
	Morphemes	-.15	-.43	-.25	.10
	Syntax	-.33	.23	-.03	.31
	Punctuation	.08	.05	-.21	.13
	Context Clues	-.20	.48	.11	.35
	Comprehension	.11	-.05	-.04	-.33
	Other	-.27	.00	-.11	.43
	Attitude to Educational TV	-.42	.06	.01	.49
	Attitude to Phonics	.08	.60	.27	-.01
	Attitude to Linguistics	-.33	.33	-.24	-.24
	Attitude to Sesame Street	-.29	.30	.55	-.10
	Attitude to The Electric Company	-.37	.84	.41	-.11
	Attitude to Reading Performance	.53	.00	.50	.33
	Job Satisfaction	.27	-.48	.57	.03
	Hours per week spent watching TV	---	---	---	---
	Number of children in class	-.26	.12	.14	-.08
	Number in class needing remedial help	-.31	.12	-.52	-.30
	Years of education completed	-.11	-.31	.06	-.19
	Years of teaching experience	.06	-.49	-.37	-.38
POSTTEST	Time spent in classroom activities (minutes per week):				
	Miscellaneous	-.14	-.17	-.01	.03
	Science	-.70	-.06	.27	.08
	Arithmetic	.33	-.30	.44	.46
	Social Studies	-.06	.02	.08	.40
	Physical Education	-.26	-.01	.35	-.05
	Language	-.31	.32	-.04	-.50
	Reading	.43	.31	-.12	-.39
	Other	-.00	-.30	-.61	.45
	Time spent in reading activities (minutes per week):				
	Blending	.16	-.18	-.17	-.55
	Letter Groups	-.50	.29	.08	-.40
	Sight Words	.04	.29	.26	.07
	Spelling	-.57	-.13	-.43	.23
	Morphemes	-.11	.15	.61	.06
	Syntax	.42	-.11	.11	.01
	Punctuation	-.05	.15	-.41	.14
	Context Clues	.28	.46	.02	-.15
	Comprehension	.10	-.17	-.03	.28
	Other	.04	-.13	.41	-.13
	Attitude to Educational TV	-.25	.30	-.42	-.37
	Attitude to Phonics	.44	.88	-.33	.10
	Attitude to Linguistics	.16	.60	-.68	-.16
	Attitude to Sesame Street	---	---	---	---
	Attitude to The Electric Company	---	---	---	---
	Attitude to Reading Performance	.69	.29	.30	.47
	Hours per week spent watching TV	-.05	-.24	.08	.10
	Number of children in class	-.39	.36	-.13	.04
	Number in class needing remedial help	-.34	.16	-.72	.12
	The Electric Company Viewing Index	.43	-.03	.43	-.22
	Usefulness with reading difficulties	-.05	.04	-.04	-.05
	Usefulness in teaching reading skills	-.22	.10	-.37	-.36
	Appropriateness for the class	.70	.13	-.18	-.25
	Time taken from other subjects to watch The Electric Company:				
	Regular reading	-.52	.40	.51	.18
	Language arts	.22	.40	-.49	.15
	Other academic subjects	-.20	-.36	.01	-.25
	Physical education	.63	-.11	.08	-.23
	Lunch	.25	-.08	-.43	-.06
	Art or Music	.15	-.46	.17	.02
	Other	-.22	.00	.06	.21
OBSERVATION RECORD	References to show	.08	.24	.08	-.39
	Inattentive children	-.43	-.44	.35	.32
	Absent children	-.19	-.54	.00	.00
	TV reception	-.02	.51	.26	-.34
	Class participation	.23	.47	-.01	.08

*To be significant at the .05 level correlations have to be greater than:

Fresno	Grade 2	.52	Youngstown	Grade 2	.52
	Grade 3	.55		Grade 3	.36